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MEDICAL ASPECTS OF ACUTE APPENDICITIS IN CHILDREN *

JOHN HOWLAND, M.D.

BALTIMORE

Nearly every one who has written on appendicitis in children has emphasized certain features: the obscurity of the symptoms; the rapidity of the progress of the disease; the great tendency to the development of peritonitis, especially general peritonitis, and, in younger children particularly, the high mortality. From the figures of Manley, McCosh and Churchman, it is readily apparent that appendicitis in children under 5 is distinctly uncommon, and in those under 2 years it is really a rare disease. Many a physician may go years without seeing, perhaps may never see, appendicitis in the very young. All the features that characterize the appendicitis of childhood have their influence on its medical aspects, and these are almost entirely connected with the question of diagnosis. While I shall deal chiefly with diagnosis and leave to the surgeons the entire question of treatment, there is one aspect of appendicitis that I should like briefly to consider. It has been almost neglected in this country. To a medical man, it appears important in its bearing on etiology and symptomatology. I refer to the part that intestinal parasites, particularly *Oxyuris,* play in the causation of appendicitis.

An excellent series of observations on appendixes and an interesting discussion of appendicitis caused by *Oxyuris* and *Trichocephalus trichiura* have been supplied by Cecil and Bulkley.[1] Two questions naturally arise: What is the proof of the etiologic importance of these parasites? In what way does appendicitis caused by them differ from other forms?

It must be confessed that there are those who dissent from the view that *Oxyuris* plays a significant part. By them the worms are believed to be the chance and innocent attendants at an unfortunate happening, and their frequent presence in the intestine, when there is no inflammatory process, a strong argument against their occasional harmfulness. The proponents, however, bring proof that is usually considered convincing. The worms are found not only in the lumen of the appendix but very often beneath the submucosa, having worked their sinuous ways through the mucous membrane, sometimes into the lymph follicles. It may be impossible to demonstrate the point of entrance of the worm even by serial sections, but there are shallow hemorrhagic ulcers that are believed to be characteristic of the injury due to *Oxyuris.* Usually, the worms are found embedded in the submucosa with little or no inflammatory reaction about them, but it does not make too great a demand on the imagination to suppose that bacteria may penetrate the tissues of the appendix along the tracks left by the parasites. The high incidence of the presence of worms within the tissues of appendixes that are the seat of catarrhal change seems to be the strongest evidence for regarding them as the cause of the attacks. Cecil and Bulkley [1] found them in fifteen out of forty cases of nonsuppurative appendicitis. Parasites were found in appendixes apparently normal at necropsy in a very much smaller percentage, but they had an insufficient number for comparison.

In gangrenous appendixes, on the other hand, worms are not nearly so common, and there is very little proof that can be brought that gangrenous or suppurative appendicitis results from parasitic infection.

In the catarrhal form, the appendix may show very little macroscopically; the evidences of peritoneal reaction are slight. It may require a microscopic examination to determine any abnormality. While the symptoms in this form are mild, there is one so pronounced as to form a rather distinct feature. That symptom is pain. The discomfort is constant, and may become exaggerated in paroxysms. This is in striking contrast to the low fever, slight leukocytosis, absence of prostration and the poorly marked tenderness, rigidity and distention.

Now if, as seems probable, *Oxyuris* and *Trichocephalus trichiura* may initiate inflammation of the appendix, a partial explanation is offered for the rarity of appendicitis in children under 2 and a constant and rapid increase of the incidence of appendicitis after this time; also for the proportionately greater frequency of suppurative and gangrenous appendicitis in young children (one of the chief causes for the milder forms not being present). The prognosis of appendicitis, in general, should be much better in older children, as indeed it is, on account of the relatively benign character of the inflammatory processes due to parasites. Finally, the presence of such a lesion should be of comfort to the surgeon, and afford him an answer to the unseemly jests of those who embarrass him with the suggestion that he removes appendixes normal in appearance.

AGE FACTOR IN DIAGNOSIS

In discussing the diagnosis of appendicitis in children, we must differentiate sharply between older and younger children; those who can express their sensations and subjective symptoms and who can assist in the examination, and those who express their symptoms only by their actions and who, far from assisting, render the examination nearly impossible from their terror and apprehension. Diagnosis in the older child differs

* Read before the Section on Diseases of Children at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

1. Cecil and Bulkley: Am. J. M. Sc. **143**: 793, 1912.

hardly at all from diagnosis in the young adult. It usually is not difficult. It is relatively accurate; perhaps as nearly accurate as that of any serious disease. Here and there, difficulties and obscurities are encountered, but, by and large, appendicitis is usually not overlooked or confused with other conditions. Moreover, laymen as well as physicians are on their guard. But the younger the child the more frequent the confusion with other diseases, the more inaccurate the diagnosis, and, as the result of this, the greater the mortality. The real problem that confronts us as physicians is the diagnosis in young children, those under 5 years of age, and sometimes under 2 years. We are the ones on whom the responsibility rests, for the surgeon is called by us only as a consultant or an operator. Young children are sent to hospitals to be operated on for appendicitis when in reality they have been suffering from totally different diseases. More frequently they are considered to have other diseases when they are really the victims of appendicitis. The frequency of mistakes is enough to convince us that we should be constantly on our guard.

There are certain reasons why appendicitis is overlooked. It is not sufficiently considered with obscure disease in the young. It may occur in the first few months; indeed, even in the first few weeks of life. The primary requisite for the diagnosis of a disease is the appreciation that it may possibly be present. Then, there is the very prevalent opinion that evidences of discomfort are not of serious importance, and that if abdominal pain is present such pain is for the child one of the penalties of existence. None can hope to escape it. Again, physical examination is often unsatisfactory. The child may refer pain, wherever situated, to the abdomen, usually the whole of the abdomen. He cries whenever touched. If he is old enough to speak, he maintains vociferously that all palpation is painful. He holds the abdomen as rigid as he can, and every attempt at approach is met with resistance. The ordeal is trying on the patient, on the family and on the physician, and is concluded as speedily as may be.

SYMPTOMS

If we are to make a diagnosis, we must rely on certain symptoms, and we must interpret the reaction of the child or the way that he betrays these symptoms. The first and most important is pain. It is regularly present, though through fear it may be denied. At the beginning of an attack, just as with the adult, the pain may be referred to some other point, especially the region of the unbilicus, before becoming localized in the right iliac fossa. The appendix is relatively long in children, and when there is a concomitant, even if localized, peritonitis, the pain may be low down in the pelvis or high up in the abdomen or in the back. It may even be on the left side. In a child too young to localize the situation of the pain or even to say that he has pain, it may be inferred from constant crying and restlessness, and from the fact that he sleeps badly. Drachter[2] has wisely called attention to this fact. Children, be they ever so ill with pneumonia or other febrile diseases, usually sleep for long stretches; but the child with abdominal pain will not sleep and will not let any one else sleep. The pain is nearly constant, but with localized suppuration may be increased with attempts at defecation or urination. A not unusual history is that screaming occurs with the accomplishment of one or the other of these acts. Churchman[3] reports the case of a boy who was sounded for stone on account of his painful voiding, and I have seen small children about whom a similar history was obtained. Pain is so commonly produced by efforts to sit up or be placed in a sitting position that the assumption of such a posture without complaint argues strongly against appendicitis. This pain may interfere with motion of the lower extremities. The adult lies with his knees drawn up. So may the child, albeit less frequently. But sometimes when he is able to be on his feet he limps, and Churchman[3] mentions the case of a boy who was treated for tuberculosis of the hip until an appendical abscess pointed above Poupart's ligament. Abdominal pain, then, is one of the most regular and important signs; it may suggest disease of many structures other than the appendix, but it should never be passed over lightly.

Fever is a constant accompaniment of appendicitis. It is absent only in the stage of collapse. As a rule, it is not high, often not more than 101 F. even when there is localized peritonitis. The height of the fever bears no relation to the severity of the lesion, and the same may be said of the leukocytosis, which generally is less than 20,000. The impression is so general that a suppurative process means high fever and a pronounced increase in the number of white cells that, these being absent, a false sense of security may prevail.

Gastro-intestinal symptoms are present. Vomiting at the beginning is almost never absent, and may occur throughout the whole course. Constipation is more frequent than diarrhea, though the latter may be persistent; and, when the stools contain much mucus, a diagnosis of dysentery is sometimes made.

Tenderness is as regular as fever. In appendicitis due to intestinal parasites, it may be insignificant; but, as patients seen in hospital practice or in consultation usually have extensive suppuration, with localized or diffuse peritonitis, and as the diagnosis is usually made by the concomitant peritonitis and only by this means, tenderness is practically never wanting, and is usually extreme. There is a great tendency for the abscesses to gravitate downward, and to extend over to the left side; therefore, the tenderness may be widely distributed and in unexpected situations, even in the absence of general peritonitis.

Reflex abdominal rigidity is difficult to elicit, except with older children who are completely cooperative. It should be made with light pressure. Deep pressure should be reserved to determine the presence of a tumor, and, for a satisfactory examination, a general anesthetic is often necessary. The tumor is usually in the expected situation, frequently, however, low down, and sometimes can be felt by rectum and not through the abdomen. A rectal examination should never be omitted. By it tenderness and a tumor are at times to be detected, when an abdominal examination gives no indication of their presence.

Such are the symptoms by means of which a diagnosis is to be made. It is not always easy; indeed, it is at times nearly impossible with the infant. Though appendicitis may simulate meningitis, intussusception, bladder stone, pyelonephritis and innumerable other conditions, the true diagnosis can usually be made if the possibility is constantly kept in mind and careful examination practiced.

APPENDICITIS AND PNEUMONIA

Appendicitis is often believed to be pneumonia in the infant on account of the frequency of pulmonary disease at this age. With older children, primary pneumonia is frequently considered to be appendicitis.

2. Drachter: München. med. Wchnschr. 65: 1043, 1918.
3. Churchman: Bull. Johns Hopkins Hosp. 20: 31, 1909.

Presumably, many unnecessary operations have been performed on account of this error. One can judge how common this error is from the statement of Adams and Berger [4] that twenty-five patients out of 145 with lobar pneumonia were sent to the Boston City Hospital with the diagnosis of appendicitis. Abdominal disease was suggested by vomiting, pain in the abdomen and tenderness, together with fever and a polymorphonuclear leukocytosis.

In the differential diagnosis of these two conditions, much can be learned from the appearance of the patient. The child with pneumonia has a flushed face; he looks really ill, and he is irritable and restless. Often, to spare himself pain, he breathes as much as he can with the diaphragm. The one with appendicitis is usually pale; he lies quietly; often dislikes to move the right leg, and keeps the abdomen as quiet as possible by breathing costally. The child with primary pneumonia has a higher fever, a more marked leukocytosis, and a more rapid pulse than the one with appendicitis.

Outspoken general symptoms of primary lobar pneumonia in a child do not necessarily mean that the physical signs are equally frank. They may be delayed in appearance for several days, especially if the consolidation is situated in the periphery of a lobe, or if it is beneath or in the region of the scapula. The situation may be puzzling, on account of the really great abdominal pain and tenderness. Both these signs are rather more general than they are in appendicitis, and often are higher up in the abdomen. The tenderness is frequently more severe than with appendicitis, for with a mild attack of the latter in an older child, it may be slight and only elicited by deep palpation. With pneumonia, however, as Adams and Berger [4] point out, the tenderness is so superficial and so little influenced by deep palpation as to suggest hyperesthesia. Tenderness detected by rectal examination is all in favor of appendicitis. Finally, material assistance is frequently but not always afforded by roentgenograms.

If the exclusion of appendicitis is difficult in older children, its recognition is much more difficult in the child under 2 years of age, partly because of its rarity. Churchman,[3] utilizing the statistics of the Johns Hopkins Hospital, reported, in 1909, nine cases in children under 5 out of a total of 1,223 cases, but no child was under 2. McCosh [5] had four patients under 2 out of 1,000. Abt [6] has compiled from the whole literature only eighty cases under this age limit. Recognition is difficult also because the symptoms are obscure, and the physical examination unsatisfactory. It is quite true, as Drachter [2] has emphasized, that appendicitis of the milder forms is not recognized in young children, and that the diagnosis rests largely on the demonstration of a localized or general peritonitis. For this reason, the abdominal and rectal examination must be careful, complete and made under anesthesia, if necessary.

I have had the opportunity of seeing seven children under 2 years of age with appendicitis. One child of 16 months was brought to the hospital on the sixth day of his illness with general peritonitis, and died almost immediately after operation. The diagnosis was made in all the other children by the history of pain, by abdominal tenderness, and by the presence of a tumor in the region of the appendix, which in one case could only be made out in deep ether narcosis. These six children were operated on and recovered.

The course of the disease in these children was not rapid. One had been sick for three days; two for six days; one for seven days; one for eight days, and one for ten days. Two of them had been supposed to have pneumonia; one, dysentery, and one, typhoid fever. A 22 months old child had had another attack four months previously. In all these cases, with one exception, the fever was less than 102.5 F., and only one child had a leukocytosis greater than 20,000. The systemic reaction, therefore, is usually not striking. It is interesting that the long series reported by Abt [6] shows that the preponderance of the male sex holds even in infancy. The ratio is, roughly, four males to one female.

CONCLUSION

There is justification for dreading this disease in the very young because the attacks are usually severe. Certainly, mild attacks comparable to those encountered in later life are distinctly uncommon. General peritonitis may supervene as early as the second or third day. But it would be a mistake to conclude that such was the rule. The literature shows, and my own experience bears it out, that many patients have lived as long as would an adult, and that the process has remained localized for days and sometimes even for weeks. I believe that Drachter is entirely right when he says that the problem of appendicitis in the young child is one of diagnosis, and that, if operation is performed before there is general peritonitis or pocketing of pus in numerous places, the mortality of appendicitis should be no greater but should be even less than it is with the adult.

4. Adams, F. D., and Berger, B. J.: Differential Diagnosis of Lobar Pneumonia and Appendicitis, J. A. M. A. **79**: 1809 (Nov. 25) 1922.
5. McCosh, A. J.: Appendicitis in Children, J. A. M. A. **43**: 853 (Sept. 24) 1904.
6. Abt, I. A.: Arch. Pediat. **34**: 641 (Sept.) 1917.

ACUTE APPENDICITIS IN CHILDREN *

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After the first year of life, appendicitis is the most frequent of all the acute emergencies of abdominal disease. Although it is primarily a disease of young persons, approximately 50 per cent. of the cases occurring in the first twenty years, no time of life, from earliest infancy to old age, is exempt. In a compiled series of more than 16,000 cases, Kelley [1] found 2.5 per cent. in the first five years of life; 8.3 per cent. in the next five-year period, and 16.3 per cent. in the third. This corresponds quite closely with our experience at St. Luke's Hospital, where, in a series of 888 cases of acute appendicitis admitted, in the five years prior to January, 1924, the percentages for the first three five-year periods were found to be 3.5, 8.5 and 16, respectively. Much consideration has been given to acute appendicitis in children, but, with some notable exceptions, the writers do not separate the age groups sufficiently to emphasize the great difference in the stage at which the disease is recognized, and in the operative mortality of the cases occurring in the first five and those in the succeeding ten years. My personal experience, on which this article is based, comprises a consecutive series of 123 cases in children, from 1 to 15 years old, operated on by me at St. Luke's Hospital, Surgical Division A, and at the Babies' Hospital. I am indebted to Dr. Walton Martin and Dr. William A. Downes for the privilege of operating on these patients.

* Read before the Section on Diseases of Children at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

1. Kelley, T. H.: Acute Appendicitis in Children, Illinois M. J. **43**: 454 (June) 1923.

Of the 123, eighty-one were from 6 to 15 years old. In this group, abscess or contamination of the peritoneal cavity necessitated drainage of the peritoneum in 60 per cent. There was the usual variety of postoperative complications in about the same proportion as found in adults, the notable exception being the conspicuous absence of postoperative ileus. Two deaths gave a mortality of 2.5 per cent., which is 2 per cent. less than the mortality in my series of patients over 15, operated on under the same conditions. In fifty-five cases followed for varying periods up to two years, there were three hernias, all in drained cases. No instance of intestinal obstruction occurred during the follow-up period. At this time of life, the pathologic condition and the clinical course are similar to that in adults; the diagnosis is, if anything, easier, and the operative results are at least as good. In children from 1 to 5, the mortality in my cases is just eight times what it is in older children, and it is to this group that I wish to direct particular attention.

The proportion of these younger children being admitted to general hospitals seems to be slowly increasing. In 1904, McCosh [2] found 1.7 per cent. in his personal series of 1,000 cases. In 1909, in an analysis of infantile appendicitis at Johns Hopkins Hospital, Churchman [3] found less than 1 per cent., as opposed to the recent figures of Kelley,[1] 2.5 per cent., and those of St. Luke's Hospital, 3.5 per cent. In services limited to children, this change is even more striking. In 1910, Dowd [4] found only fourteen in 181 cases, while Beekman,[5] in 1923, noted twenty-one in his series of 145 cases from the children's service at Bellevue Hospital. These figures, of course, merely represent the incidence of patients operated on. In this group, my cases number forty-two, the relatively large proportion of young children being due to the fact that the Babies' Hospital admits only the younger children. Over 90 per cent. of these patients were admitted with an abscess or a ruptured appendix with more or less widespread peritonitis. In Beekman's [5] series of twenty-one patients, the appendix was ruptured in every instance. This condition of affairs is usually explained on the ground of the insidious onset; the rapid course of the disease, and the great tendency of the appendix to rupture in young children, together with their lack of resistance. The duration of symptoms is interesting, and has a bearing on the popular belief that the course of appendicitis is much more rapid in children than in adults. In analyzing my series of cases in the first five-year period, I find that the shortest history was twelve hours, and the longest, fourteen days. In only four was the duration of symptoms before admission to the hospital less than two days, and all these children recovered. The average duration of symptoms before admission was four and a half days.

DIFFICULTY OF DIAGNOSIS

Practically every one who has written on this subject is of the opinion that many cases go unrecognized, and it seems reasonable to assume this, when the anatomy of the appendix at this time of life is considered, together with the fact that the rest of the intestinal tract is so liable to infection. It seems to me that one is inevitably led to the conclusion that the clinical picture of acute appendicitis in young children is founded on a group of cases representing the last stages of the worst forms of appendicular inflammation. I consider it unreasonable to assume that inflammation of the appendix in young children almost invariably tends to perforation. I am convinced that this impression has been derived from the fact that only the worst cases are recognized, and that those cases in which resolution takes place, with more or less permanent damage to the appendix, usually are not diagnosed until a subsequent attack, at a time of life when the diagnosis is more easily made. We shall continue to have many unnecessary deaths until we have it firmly fixed in our minds that the high mortality is due chiefly to our inability to recognize the disease in its early stages, and only to a small extent to whatever difference in clinical course and lack of bodily resistance is peculiar to this period of life. That the diagnosis is and will remain difficult is obvious, but it is difficult because a disease, essentially similar in pathologic process and clinical course to the same disease in older children and adults, occurs in a little child who cannot describe his symptoms and on whom a satisfactory abdominal examination is difficult.

Certain anatomic facts should be noted. The appendix in childhood is relatively larger than in later life in relation both to the size of the body and to the length of the alimentary canal. The junction of the cecum and the appendix is more apt to be funnel shaped. Lymphoid tissue is present in a relatively large amount after the second year. An incompletely rotated cecum, or even a very movable cecum, may cause the appendix to be in an abnormal position. Furthermore, the lumbar region in the child is relatively short, and the appendix is situated at a relatively higher level.

The etiology is in doubt. At this time of life, I believe that sex has no influence. Appendicitis is not infrequently associated with infectious diseases: measles, acute rheumatism, enterocolitis, etc. The association with influenza and tonsillitis has been stressed. In 60 per cent. of Porter's [6] series, a history of tonsillitis could be elicited. I have been unable to draw any conclusions as to etiology from my own experience. I am convinced, however, that a very frequent determining cause of necrosis and perforation is the presence of a fecalith. In 12 per cent. of my patients, there was a history of one or more previous attacks. Many cases, of course, are characterized by variations from the typical picture. The classical symptoms and signs of appendicitis are: pain, usually referred to the umbilical region or epigastrium, later to the region of the appendix; nausea and vomiting; abdominal sensitiveness with muscular defense, most marked in the region of the appendix, and moderate elevation of temperature. The difficulty of diagnosis is inversely proportional to the age of the child. I have never seen a case in the first year save at necropsy. There are many on record, however, usually revealed by an abscess or peritonitis. In 1917, Abt [7] was able to compile from the literature eighty cases of children under 2 years, about one half being in the first year. That the disease may be recognized in an infant, while still confined to the appendix, is proved by the case reported by Schwartz,[8] in an

2. McCosh, A. J.: Appendicitis in Children, J. A. M. A. 43: 853 (Sept. 24) 1904.
3. Churchman, J. W.: An Appendix Abscess in a Twenty-Seven Months' Child, with an Analysis of Infantile Appendicitis in the Johns Hopkins Hospital, Bull. Johns Hopkins Hosp. 20: 31, 1909.
4. Dowd, C. N.: Acute Appendicitis in Children, New York State J. Med. 10: 100 (March) 1910.
5. Beekman, Fenwick: Acute Appendicitis in Childhood, Ann. Surg. 79: 538 (April) 1924.
6. Porter, Langley: Appendicitis in Childhood, California State J. Med. 16: 10 (Jan.) 1918.
7. Abt, I. A.: Appendicitis in Infants, Arch. Pediat. 34: 641 (Sept.) 1917.
8. Schwartz, A. B.: Acute Appendicitis in Infancy, Arch. Pediat. 41: 280 (April) 1924.

infant of 6½ months operated on on the third day of illness.

When the disease is confined to the appendix or limited to a localized abscess, the general appearance and behavior of the child is often such as not to suggest serious illness. Pain, vomiting and fever are particularly difficult to interpret in children. The pain is rarely localized, and we must frequently be content with the statement that the child seemed to have abdominal cramps. If old enough, he will sometimes localize the pain to the umbilical region or even to the right lower quadrant. Not infrequently, the right thigh is held flexed, and sometimes attention is drawn to the condition by the child's leaning to the right when walking. The degree of pain varies within wide limits, and where in adults pressure aggravates the pain, in a child occasionally sleep will be induced by massage of the abdomen, even in the presence of an inflamed appendix. The pain may come in attacks between which the patient is comfortable, as in the following instance.

A boy, not quite 2 years old, complained of abdominal pain two days before admission. This pain lasted half an hour, and then ceased, to recur in a similar attack later in the day. The next day, and until the afternoon of the day of admission, the child seemed quite well. He then had another attack of sharp pain, and there being definite, localized tenderness with a suggestion of rigidity and a temperature of 102.6, he was operated on, and an acute suppurative appendicitis found.

In 90 per cent. of my series, the onset was characterized by definite abdominal pain. In three instances, there was no evidence of pain, and the attack was initiated by persistent vomiting. In one other, vomiting persisted for some time before pain was complained of. This method of onset is illustrated by the following history:

A child of 13 months was perfectly well up to two days before admission, when he became feverish and restless, whined a good deal, and vomited. A physician came and prescribed some powders, after which the baby vomited ten times. The physician prescribed other powders, and the baby continued to vomit. The stools were frequent and bad. The abdomen became distended, and, another physician being called, the child was sent to the hospital. At operation, a ruptured appendix, with rapidly spreading peritonitis, was found. The child recovered.

There were four cases in which vomiting did not occur at all. Constipation is more frequent than diarrhea, but more or less normal bowel movements are more frequent than either. Probably there is always elevation of temperature at some stage. Occasionally, however, normal temperature is found when the child reaches the hospital. In three of my patients, the rectal temperature on admission was below 100. The range in this series was from 98 to 105, the greater number being between 100 and 102.5. The leukocyte count varied widely, from 4,300 with a polyneucleosis of 64 per cent. in a 4-year-old child, with a grossly ruptured appendix, an abscess and spreading peritonitis, to 42,000 with 95 per cent. polymorphonuclears in a child of 5 with a small, well localized abscess. Both children recovered.

The temperature and the leukocyte count appear unrelated, nor do I derive any information as to the bodily resistance of the patient from the leukocyte count. When the temperature is high, the respiratory rate is correspondingly increased. However, notably fast respiration is suggestive of lung involvement. In all but one of these patients, I could detect tenderness. In a few, when the child was crying or was difficult to control, I was not quite certain. In many, a mass could be palpated. In one there was a definite mass which was not tender. Rigidity is particularly hard to evaluate. When it is present, it is a very valuable sign; but it is frequently difficult to be certain whether it is present or not.

Local tenderness is the most valuable of all signs. If corroborated by pain and vomiting with moderate elevation of temperature and leukocyte count, the diagnosis is reasonably sure. When I can convince myself that there is no local tenderness, I hesitate to make the diagnosis. A retrocecal position adds difficulty to the detection of tenderness. The appendix may extend into the pelvis or across the midline. In either instance, the parietal peritoneum may be protected by the coils of small intestine surrounding the appendix, in which case both rigidity and tenderness will be less marked and more difficult to detect. It is here that the rectal examination, which should never be neglected, is particularly valuable. The absence of no one sign or symptom is sufficient to rule out appendicitis. The order of value in my estimation is: local tenderness, with or without muscular rigidity, pain, vomiting, elevation of temperature and leukocytosis.

The more I see of appendicitis in young children, the more do I think that the pathologic process closely approximates that in the older child and the adult. I am led to believe, however, that in children 2 years and under, there is probably less tendency to localize the infection and that peritonitis is more frequent and widespread than it is in a similar condition in older children and adults. The relatively small omentum at this period has been suggested as the cause of this difference in the pathologic condition. Of my forty-two patients, eight were in the second year of life. In only one was the appendix unruptured. In seven there was rupture with widely spreading peritonitis. There were three deaths. Two children were operated on at 13 months, the youngest in my series. Both recovered. In the remaining thirty-four cases there were five deaths, making a mortality of eight for the series of forty-two, or 20 per cent. In the eight deaths, the duration of symptoms was from two to seven days.

In differential diagnosis, many conditions must be taken into consideration, and a complete, careful physical examination is in every instance essential. Of the conditions outside the abdominal cavity, oftentimes the most difficult to distinguish is the onset of a respiratory infection or of one of the other infectious diseases. In the case of pneumonia, in the absence of physical signs, there is frequently the characteristic appearance. In doubtful cases, a roentgenogram may be of great value. Finney [9] calls attention to the occurrence of sharp abdominal pain at the onset of measles. Brenneman [10] refers to the occurrence of abdominal pain in throat infections, and believes it to be probably the most frequent single cause of such pain in children beyond the period of infancy. Acute hip disease, osteomyelitis of the femur or ileum, psoas abscess, spondylitis, retroperitoneal abscess in the iliac fossa, and inguinal or femoral adenitis may all at times cause confusion. Of the intra-abdominal conditions, gastro-enteritis and gastro-intestinal colic are to be differentiated by the history of dietary indiscretion, the usual subsidence of vomiting after the stomach is emptied, and the absence of fever, leukocytosis and localized tenderness. How-

9. Finney, J. M. T.: Appendicitis in Children, Old Domion J. Med. & Surg. **10**, March, 1910.
10. Brenneman, J.: The Clinical Significance of Abdominal Pain in Children, Surg., Gynec. & Obst. **34**: 344 (March) 1922.

ever, many such attacks are probably instances of mild appendicitis. General peritonitis due to the pneumococcus, streptococcus and, rarely, the gonococcus is always difficult and frequently impossible to differentiate. In female children, there is also, I believe, a form of pelvic peritonitis that is quite analogous to the acute salpingitis and pelvic peritonitis of adult females. Mesenteric lymphadenitis, tuberculous or not, may give a picture that is quite impossible to differentiate from appendicitis. Intussusception is most frequent in the first year, when appendicitis is rarely seen, and the characteristic history and abdominal tumor will serve to distinguish it. In pyelitis, the temperature is usually higher than the physical signs would indicate, and is not sustained; rigidity is not present, and tenderness is in the kidney region. It must be remembered that painful micturition and pyuria may occur in appendicitis, nor does a single specimen of urine without pus exclude pyelitis. Distention of the bladder is not infrequent in young children, and may be confusing. Many other conditions might be mentioned, but I shall only refer to one that recently came under my notice. In an 8 months old baby, with vomiting, distention and a palpable mass just above the umbilicus, I made a tentative diagnosis of appendicitis with a nonrotated cecum or intestinal intussusception. Operation revealed a typical acute pancreatitis. The child recovered after a stormy convalescence.

OPERATION

There are no exceptions to the rule that appendicitis is a surgical disease in children. Even surgeons who advocate delay in certain adults advise operation in similar cases in children. When a diagnosis has been made, operation should be carried out forthwith. No man, no matter how experienced, can foretell the outcome in a given case. There are certain instances in which the suspicion is strong, but a definite diagnosis cannot be made. In such cases, an exploratory operation is frequently indicated. The risk of a well conducted exploratory operation is in no way comparable to the risk of a ruptured appendix. In closing the discussion of his paper on the diagnosis of appendicitis in children, Helmholz [11] said: "It is better to operate on an occasional pneumonia thought to be appendicitis than to let an acute appendicitis go to generalized peritonitis." Every child with abdominal pain and vomiting should be considered a potential case of appendicitis. It is in the improvement of the management of these cases under suspicion that the mortality will be lessened.

It has been demonstrated that bacteria in the alimentary canal are numerous and of great activity at the junction of the small and large intestines. Starvation tends to render sterile those parts of the intestine which can be caused to empty. By the administration of cathartics, a tumult of activity in the intestinal tract is excited; secretion is more profuse, and the bacterial virulence is augmented. It is a matter of common knowledge that one rarely sees a patient with a ruptured appendix who has not had one or more doses of castor oil or other cathartic. No child who has an abdominal pain should have a cathartic until the possibility of appendicitis has been excluded. Starvation and enemas should be the order of the day. Not only should the physician not order cathartics under these circumstances, but mothers should be made to understand that the indiscriminate use of cathartics is an evil, and that they must curb what Sir Berkely Moynihan [12] refers to as the "philo-cathartic propensities of motherhood."

The method of operating, while of far less importance than an early diagnosis, has some bearing on the outcome. Gentleness is a prime requisite, and should not be sacrificed to speed. The material used for drainage is important. Dental rubber dam and, very rarely, soft split rubber tube answer all purposes. In certain desperate cases, the operation should consist merely of an incision and the introduction of a drain. In abscesses in which the appendix is not readily accessible, no attempt is made to remove it. In five of this series, this procedure was carried out. In the four survivors, the follow-up is interesting. In one, operated on at 13 months, there was another attack three years later and, at another hospital, a gangrenous appendix was removed. Another, operated on at 3 years, developed a secondary abscess three months after the operation. This cleared up, and with the exception of a ventral hernia, she is well four years after the operation. Two others have had no trouble. Of the forty-two patients, eight died; five cases are too recent for follow-up purposes, and nine patients were lost track of. The twenty remaining were followed for varying periods up to four years, and three ventral hernias were noted.

The postoperative treatment is important. In all but the simplest cases, a hypodermoclysis of 3 per cent. glucose solution is given immediately after the operation, and this is repeated twice daily until the child is taking a sufficient quantity of fluid by mouth. I have never found proctoclysis satisfactory in the young children. Children do not bear deprivation of food as well as adults, and its administration is begun as soon as possible. When a sedative is indicated, a very small dose of codein is given and repeated when necessary. For abdominal distention, I rely on enemas and pituitary extract. Practically the only laxative used is magnesia magma in repeated small doses. Persistent vomiting is treated by lavage.

CONCLUSIONS

1. Acute appendicitis after the fifth year has little to differentiate it, in the clinical course and results, from the same disease in adults.

2. In the first five years of life, the disease is of sufficient frequency to merit constant consideration.

3. No child with symptoms of abdominal disturbance should receive a cathartic until the possibility of appendicitis has been excluded.

4. There is no exception to the rule that an operation is indicated forthwith in any stage of acute appendicitis in a child.

5. Late recognition of the disease, rather than rapid course and lack of bodily resistance, is the cause of the high mortality.

424 Park Avenue.

11. Helmholz, H. F.: The Diagnosis of Acute Appendicitis in Children, Minnesota Med. 7: 187 (March) 1924.

12. Moynihan, B. G. A.: Acute Emergencies of Abdominal Disease, Brit. M. J. 1: 733 (April) 1911.

Hazards of Rural Mail Routes.—During the last two and one-half years, fifty-five carriers have lost their lives in the performance of duty. Records of the postoffice department show that among the most dangerous and difficult rural mail routes are those from Newport to Otter Rock, Ore.; from Ellison Bay to Detroit Harbor, Wis.; from Rocky Bar to Atlanta, Idaho; from Sandusky to Kelly's Island and from Middle Bass to Put-in-Bay, Ohio. The most expensive star route in the United States is that from Price to Vernal, Utah, 121 miles long, which cost $96,700 to maintain for the year ending June 30, 1923.

CHRONIC APPENDICITIS IN CHILDHOOD *

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The present attitude of many surgeons with regard to chronic appendicitis is one of skepticism. It is natural that a reaction should come, after the wholesale removal of appendixes ten or fifteen years ago without sufficiently careful differential diagnoses. As a result, the failure of appendectomy to cure pain in the right iliac fossa in adults has been much emphasized. In order to condemn entirely the removal of appendixes for chronic appendicitis, it is necessary to prove that appendectomy does not relieve the symptoms, or that the percentage of failures is sufficiently high to make the operation unjustifiable. A study of the symptomatology and the results of operation in a group of children, in whom the neurasthenic element, so often encountered in adults, is rarely present, would therefore seem of value.

The records of 100 cases in children under 13 years of age, in whom a clinical diagnosis of chronic appendicitis had been made and appendectomy performed, have been studied. No case has been included in which the chronicity of the condition was not established, or in which the symptoms or operative findings suggested an acute inflammatory attack. It has been impossible to differentiate clinically between chronic appendicitis and recurrent subacute appendicitis, and they have been grouped together in this series.

Chronic appendicitis in children, like acute appendicitis, is more commonly encountered in the male, which also coincides with the findings in adults. It is rarely found in children under 5 years, the youngest patient in this group being 2½ years of age. The greatest number of patients was in the eighth year. It is of interest that the average duration of symptoms in these cases was sixteen months. In practically two thirds of the cases it was more than six months, and in five instances it was more than five years.

Abdominal pain was the chief complaint in 92 per cent. of the cases, while headache, vomiting or constipation was the salient symptom in the remainder. Frequently, the location of the pain was not clearly defined, or it did not indicate the site of the lesion. To the child, the navel is the one outstanding abdominal landmark, and the indicating finger naturally points to it in the effort to localize abdominal pain. Even in acute appendicitis, this may be observed, and the umbilicus is indicated as the seat of pain even in the presence of a localized abcess in the right iliac fossa. Therefore, it is not surprising that, although the pain was referred to the right lower quadrant in about half the cases, it was generalized in 35 per cent. and in a few instances was referred to the epigastric region or to the umbilicus.

The occurrence of nausea and vomiting, frequently associated with attacks of abdominal pain, can be elicited from the history in more than two thirds of the cases. Habitual constipation is frequently emphasized by the mother, and rarely diarrhea may accompany attacks of pain. Headache, lack of appetite and lassitude may be noted. Chronic appendicitis does not produce urinary disturbance. In this it differs from the acute form of the disease in childhood, in which frequency of micturition is not uncommon. In childhood, the cecum is low, and the appendix usually lies over the brim of the pelvis, often in close proximity to the bladder. Thus, when an acute inflammatory condition arises, vesical irritability may result.

Tenderness in the right lower quadrant is the only sign of value in the abdominal examination. It is fairly constant, occurring in 59 per cent. of the cases, typically at McBurney's point or slightly below it. Occasionally, the tenderness is diffuse or referred to both lower quadrants. In such patients, operation is apt to disclose enlarged hyperplastic glands in the mesentery of the ileum, well above the ileocecal valve. In 25 per cent. of the patients, the abdominal examination is entirely negative.

A rectal examination was made on twenty-three children. Right-sided pelvic tenderness was elicited in nine instances, but in no case was rectal tenderness encountered in which the abdominal tenderness was absent. Therefore the rectal examination did not afford any information of value in the most difficult type of case for diagnosis, that in which the physical examination was otherwise negative.

The value of the roentgen-ray examination in the diagnosis of chronic appendicitis has been questioned. Certainly, negative evidence in ruling out ureteral stone, calcareous ileocecal glands, or disease of the hip or spine, is of value. Roentgenograms of the urinary tract, the dorsal and lumbar spine, the pelvis and hips should be a routine procedure in every case. Furthermore, we believe that a careful gastro-intestinal study will frequently yield additional information of value. Retention of barium in the appendix for an extreme length of time is suggestive of angulation, or of interference with peristalsis by adhesions or stricture. Fixity and tenderness of the caput under the fluoroscope is perhaps the most important finding. In childhood, the barium meal passes rapidly through the small intestine, and in the normal patient has largely passed the ileocecal valve at the end of the six hour interval. In chronic and subacute appendicitis, one frequently encounters a six hour gastric residual for which spasm of the pylorus is responsible. There is frequently a marked ileac retention at this time, brought about by reflex ileocecal spasm, or, more rarely, attributable to a mechanical cause, to angulation or in the interference with peristalsis by adhesions. Though the roentgen-ray evidence is not conclusive, we believe it is confirmatory and of value in connection with the history and physical findings.

I have recently been told by a surgeon that there was no such clinical entity as chronic appendicitis, and that the value of this discussion would be in pointing out the possibilities of mistakes in the differential diagnosis. With the first part of this statement, I do not agree, but with his statement that the differential diagnosis is of the utmost importance, I am heartily in accord. I believe that, in each case, search should be made for some other cause in order to explain adequately the symptoms, and that the diagnosis of chronic appendicitis is to be accepted only when every other possible cause has been carefully excluded. The chest should not be disregarded, although it has not the importance here that it has in the differential diagnosis of the acute form of appendicitis. A pleuritic adhesion may be the cause of a misleading pain. Pyelitis is most difficult to rule out, and the negative findings of repeated urine analyses are necessary for a conclusive decision. Iliac adenitis or abscess, being retroperitoneal, produces marked psoas

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spasm with flexion of the thigh, tends to point along Poupart's ligament, and sometimes, through the femoral canal, is less likely to be accompanied by nausea and vomiting, lacks the chronicity, and the initial lesion or its scar can generally be found on the lower limb. Early hip and spine disease as well as ureteral calculus should be ruled out by roentgenograms, as well as by clinical tests. Stone in the ureter is by no means rare in childhood and is not necessarily accompanied by hematuria. Abdominal pain accompanying chronic constipation, recurrent gastro-intestinal upsets resulting from faulty diet, from fat indigestion, and so-called cyclic vomiting, must also be considered. Visceroptosis accompanying faulty posture and the discomfort preceding the onset of menstruation may be the cause of vague abdominal pain. At operation, the abdomen should be explored and Meckel's diverticulum, ovarian cyst and tuberculosis should be excluded. Recently, I saw a girl of 9 in whom the diagnosis was very obscure, lying between recurring subabcute appendicitis and intermittent hydronephrosis. The symptoms were produced by an aberrant artery to the lower pole of the right kidney, and the vessel was sectioned at operation.

TABLE 1.—*Symptomatology in One Hundred Cases*

Age	No. Cases
0 - 5 years	9
5 - 9 years	46
9 -13 years	45
Youngest patient, 2½ years	
Incidence	
Males	55
Females	45
Pain Location	
General	35
Right lower quadrant	53
Umbilical	7
Epigastric	5
Urinary Symptoms	
Dysuria or frequency	5

Duration of Symptoms	No. Cases
0-½ years	37
½-1 year	20
1-2 years	17
2-5 years	21
5 years +	5
Average duration, 16 months	
Gastric Disturbance	
Vomiting	69
Nausea without vomiting	12
Neither nausea nor vomiting	19
Bowels	
Regular	41
Constipation	40
Diarrhea	5

Adhesions of greater or less extent were noted in forty-nine instances, and in forty the appendix was free. In seven of the forty-nine cases in which adhesions were present, suggesting clinically a previous appendical involvement, the pathologic examination revealed a normal appendix. This does not necessarily mean a faulty observation at operation, for the adhesions may have been few and limited, showing a mild localized process in the appendix through which the pathologists' sections did not happen to pass. On the other hand, of the seventeen cases described at operation as not grossly pathologic, seven presented histologic evidence of infection, five of chronic and two of subacute appendicitis. Thus, an appendix that appears normal at the time of operation may be the seat of a chronic inflammatory process, and appendectomy may be curative in spite of the gross appearance.

The appendix was described as thickened in forty-one instances. This is usually accompanied by injection. The obliterative type of appendicitis is rarely encountered in childhood, and has been observed in only six instances. *Oxyuris vermicularis* occurs with considerable frequency in the appendix in childhood. Great numbers of these minute worms may form a ball of considerable size in the lumen near the tip, with marked injection and even erosion of the mucous membrane. The suspicion of the existence of such a condition may even be raised in a child in whom *Oxyuris* persists after adequate medication, and frequent indefinite colicky pain occurs in the right lower quadrant. In one instance, a true foreign body was found, a common pin with the head in the lumen of the appendix and the shaft perforating the wall and lying within an old chronic abscess cavity. Fecaliths composed of vegetable fiber and of extreme hardness are occasionally found lying within dilatations of the lumen, the mucous membrane inflamed and eroded, and the size of the fecalith preventing its extrusion into the cecum.

Hyperplasia of the lymphoid structure throughout the body is normal in childhood, and the Peyer's patches and lymphoid elements in the appendix are no exception to the rule. Ileocecal adenopathy is frequent in conjunction with chronic appendicitis, occurring in one third of the cases. In six instances, the glands appeared tuberculous. Cervical adenitis, so prevalent in childhood, arises secondarily to infection of the adenoid ring. Similarly, ileocecal involvement arises secondarily from the lymphoid structures of the intestinal tract in the region of the ileocecal valve. Slowing of the fecal stream will increase the opportunity for migration of infection through these portals of entry. Ileocecal adenopathy may be produced in chronic appendicitis by direct lymphatic extension from the infected organ, indirectly by mechanical stasis from obstructing or angulating adhesions across the terminal ileum, or by ileac retention from a reflex ileocecal spasm.

Pathologic study of the appendix revealed chronic appendicitis in 40 per cent. of the cases examined. Subacute appendicitis occurred one half as frequently, and the report stated that in 28.5 per cent. of the cases the appendix was normal. In two instances, early acute suppurative appendicitis was reported, although the child had none of the clinical manifestations of the disease.

Convalescence after simple appendectomy should be uneventful. Two patients, however, showed alarming symptoms directly referable to the operation. In one, there was a sharp postoperative rise in temperature to 104 F., an elevation of pulse and marked prostration. No evidence of chest involvement, hemorrhage or peritonitis was found, and the condition was ascribed to a severe postoperative acidosis. The symptoms rapidly disappeared, and convalescence was uneventful after the third day. The other child developed an extensive peritonitis after the operation; this became localized, and ten days later a large pelvic abscess was opened. After that, recovery was uninterrupted. This patient was operated on by an intern, and it is considered probable that a break in technic occurred.

TABLE 2.—*Physical Examination*

Abdominal Tenderness	
Right lower quadrant	50
Generalized	6
Both lower quadrants	4
Absent	25
Urine Examination	
Negative	87
Pus in small amount and transient	13

Gastro-Intestinal Roentgenographic Examinations	
Number studied	23
Number suggestive of disease in right lower quadrant	11
Rectal Examination	
Number of cases examined	23
Tenderness present	9
Other Abdominal Findings	
Voluntary resistance, right lower quadrant	24
Palpable masses, glandular	12

Follow-up reports have been obtained in fifty cases, at intervals varying from two months to more than five years. The mother's statement has been taken in determining the success or failure of the operation. In 62 per cent. of the cases, the operation was considered

completely successful; there was no recurrence of symptoms, and the children were well. Improvement was stated by the parents to have taken place following operation in 28 per cent. Failure occurred in 10 per cent. In a number of instances, the mother volunteered such remarks as "He has been like a different child since his operation," and "Operation has done wonders for him."

It seems hardly possible that such favorable results as these could be produced entirely by the psychologic effect on the mother. After the patients' discharge from the hospital, no attempt was made to lay out a strict dietary regimen, or to improve the living conditions by social service instructions. It would seem, therefore, that appendectomy was responsible for the results.

A definitely larger proportion of failures occurred in girls than in boys. Seventeen per cent. of the girls reporting were unimproved by appendectomy, and 6 per cent. of the boys. This striking difference is probably due to the much more frequent occurrence of pyelitis in girls, with the attendant risk of an error in diagnosis. Also one girl was operated on who later proved to be a well marked neurasthenic.

TABLE 3.—*Pathologic Findings and Postoperative Complications*

Pathologic Findings	Number	Per Cent.
Total number of pathologic reports	70	..
Chronic appendicitis	28	40
Subacute appendicitis	14	20
Subacute and chronic appendicitis	3	..
Acute and chronic appendicitis	3	..
Early acute suppurative apendicitis	2	..
Normal appendix	20	28.5

Postoperative Complications	Number
Otitis media	1
Otitis media and wound infection	1
Acidosis	1
Postoperative pelvic abscess	1
Partial obstruction (?) relieved by enemas	1
Urinary retention relieved by catheterization	1
Mortality	0

Eight patients reported, in whom evidence of chronic appendicitis was found at operation, but in whom the pathologic report was negative. Five were considered well, two improved and one unimproved. On the other hand, there were four patients in whom at operation no gross pathologic changes were found but in whom the histologic evidence was positive. Three of these were cured and one improved. Two reported, in whom both the operative and pathologic findings were negative; one was well and the other improved.

I do not believe that a typical acute attack of appendicitis must necessarily precede the chronic form of the disease. Retention of fecal matter for an undue length of time will be followed by the production of gas, distention and appendical colic. When the pressure of the gas distal to the fecal plug becomes sufficient, the mass is extruded into the cecum, with relief of the pain. The attack is unaccompaned by fever, and no gross or histologic evidence is left. Appendical colic explains some of the good results of appendectomy in the face of negative operative and pathologic findings. Should the fecal mass, however, remain in the appendix, a firm fecalith develops and erosion and subacute infection, with round cell infiltration, results. Cicatricial contraction occurs proximally to the fecalith, and a stricture is formed. If the infiltrating process continues to extend, appendical adhesions are formed. Finally, a more virulent form of infection penetrates the traumatized mucous membrane, and an acute suppurative appendicitis develops.

It is true that many chronically inflamed appendixes do not contain fecaliths, and a fecalith is not essential for the production of pathologic changes. Repeated mild subacute infections, so indefinite in character as to be valueless in localizing the seat of trouble, may give rise to digestive disturbances, indefinite abdominal pain

TABLE 4.—*Operative Findings*

Condition of the Appendix		Adhesions	
Clinical evidence of disease	64	Appendix or cecum	49
No gross evidence of disease	17	No adhesions	40
Not mentioned	19	Not mentioned	11
Thickened	41		
Constricted or obliterated	6		
Kinked	12	Enlarged Ileocecal Glands	
Fecalith	8		
Oxyuris vermicularis	5	Hyperplastic	22
Foreign body (pin)	1	Tuberculous	6

and the impairment of normal good health. The majority of the cases in this series presented no history suggestive of an attack of acute appendicitis, and yet appendectomy was a curative measure in 62 per cent., and there was definite improvement in many more. It would seem illogical, and unnecessarily jeopardizing the patient in the light of the present day refinements of diagnosis, to insist on a definite acute inflammatory attack before the existence of a diseased appendix is admitted.

From the evidence derived from the study of a limited number of cases, it would appear that chronic appendicitis is a definite clinical entity, that the pathologic evidence usually supports the clinical diagnosis, and that, with sufficient care in the differential diagnosis, complete relief of symptoms may be expected in about two thirds of the cases, and definite improvement in nearly 90 per cent. In support of this view is the general improvement so often observed following appendectomy for acute suppurative appendicitis. Not infrequently there is the previous history of digestive upsets for years, which may have been diagnosed as acidosis, cyclic vomiting or fat indigestion, with no history of any well defined attack referred to the right lower abdomen. The child has been somewhat under-

TABLE 5.—*End-Results*

		Success		Improved		Failure	
Reported	No.	No.	%	No.	%	No.	%
Total number	50	31	62	14	28	5	10
Male	22	23	72	7	22	2	5
Female	18	8	44	7	39	3	17

Time Elapsed Since Operation	Success	Improved	Failure
2-6 months	4	3	2
6 months-1 year	5	..	2
1-2 years	3	..	..
2-5 years	14	9	1
5 years +	4	2	..

weight, the appetite erratic, the bowels irregular, and the disposition fretful and nervous. Attacks of vomiting may occur without previous indiscretions of diet, and abdominal pain may be absent or vague, colicky and generalized. Finally, a typical, well marked, acute attack occurs. At operation, a gangrenous adherent appendix lying below the brim of the pelvis is removed. It is found to contain a hard fecalith that has evidently been long embedded. The mucous membrane around the fecalith is eroded, and perforation has occurred in

this area. After the recovery from the operation, the digestive disturbances do not recur, the child is active and happy, the bowels become regular, and there is a marked gain in weight the ensuing year.

Pathologic changes are unquestionably produced whenever the abdomen is opened, and laparotomy should not be performed without undue cause. The very real danger of unnecessary operations and the indiscriminate removal of appendixes that are causing no symptoms cannot be overemphasized, and can be guarded against only by the most painstaking care in diagnosis. Particularly in girls is the differential diagnosis a difficult problem. In them the percentage of cases in which relief of symptoms is not obtained by operation is unduly high, and must be cut down by a more careful search for other causes. However, to obviate the risk to life and the increase in disease following in the wake of an acute suppurative attack of appendicitis, appendectomy should be advised for chronic or subacute appendicitis when, by a careful differential diagnosis, all other possible causes to explain the symptoms have been excluded.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. HOLLAND, BOLLING AND MIXTER

DR. BORDEN S. VEEDER, St. Louis: The importance of appendicitis in childhood is well brought out by the statistics that Dr. Bolling has presented. In the St. Louis Children's Hospital, 75 per cent. of the children admitted with appendicitis had an associated peritonitis. I do not think that the fault lies so much with the physician as with the parents, who usually consider the attack one of indigestion and fill the child with castor oil. Another point toward error is the rapidity with which the symptoms of appendicitis in young children will disappear. I have made a diagnosis of appendicitis, and an hour or two later, when I saw the child with a surgeon, all the symptoms had disappeared. I believe that we should rely chiefly on local tenderness and muscle spasm in making a diagnosis. The muscle spasm can be detected by the gentlest touch, and is usually present for some time after the vomiting and pain have stopped and the child is comfortable. I agree with Dr. Bolling on the question of operation. In a child one can never foretell the course appendicitis will take, and frequently the most severe cases manifest mild symptoms. Moreover, we know that even if one attack quiets down, it is almost sure to be followed by a second attack. In regard to chronic appendicitis, I should like to ask Dr. Mixter whether he has ever found pinworms as a cause. The only satisfactory method of diagnosing chronic appendicitis is by the use of the barium test meal. Most of the chronic cases I have seen have been of the mechanical type, but in two or three I have found pinworms as the probable cause. The roentgenogram is one of the most important aids in differential diagnosis. Dr. Sale has called my attention to the limitation of movement of the diaphram in cases of acute appendicitis. We need no excuse for occasionally making mistakes in diagnosis. If we make a mistake in taking out a normal appendix, we are erring on the right side. In addition to the complex of pneumonia, cases of acute mesentery enteritis with abdominal pain and muscle spasm over the lower right quadrant give a typical picture of an acute appendicitis, one that cannot be differentiated. It is better to consider such a condition as appendicitis and remove the appendix, even though it is normal, than to take the chance of waiting, with the probability of peritonitis developing if the case is one of appendicitis.

DR. I. A. ABT, Chicago: I wish to emphasize the important point that appendicitis may occur very early in life. It may occur soon after birth, up to the third month, and after that age the disease may be observed with a certain frequency. After all, the diagnosis of appendicitis in infants and young children is extremely difficult, and requires the very best thought and attention. Appendicitis may be confused with a number of other conditions: respiratory disease, tonsillitis, adenitis, pneumococcus peritonitis, intussusception, coxalgia, pyuria, scarlet fever and other acute infectious diseases. In Kurchmann's series, there was a child with appendicitis who was supposed to be suffering from vesical calculus. Dr. Howland has enumerated and evaluated the symptoms that occur in very young children. It is not necessary to repeat them, except to say that abdominal tenderness, muscular rigidity, and marked pain over McBurney's point are very valuable signs, if present; but it is often difficult to elicit these signs, as they may be absent or not marked enough to warrant diagnosis. Palpation of the tumor is an important factor in diagnosis. Fever and abdominal pain may be associated with other conditions, and may be present in either intra-abdominal or extra-abdominal lesions. Therefore, these cannot be used exclusively as diagnostic evidence. One must therefore be careful in observing the patient, and watch the child with the assistance of an experienced nurse, some one who will record the symptoms in the absence of the physician, particularly as to abdominal pain and rigidity. As far as treatment is concerned: Children have been operated on when pneumonia or pyelitis or some other extra-abdominal condition existed. Yet, I often think of what McCrae said with regard to the high mortality from perforation in typhoid fever. He said: "We must remember that our endeavor is to recognize the perforation and not the resulting general peritonitis. Exploration should be advised in a doubtful condition, and can be done under cocain. If there is no perforation, the incision can be closed with little or no harm to the patient. "If one delays, one may lose the patient. Rupture of the appendix and general peritonitis may occur early and without much warning in infants and young children.

DR. ROBERT T. MORRIS, New York: Except in very young children, tenderness over McBurney's point and muscular rigidity throw light on the diagnosis of acute appendicitis. One of the most important signs also is involuntary flexion of the right leg to relieve psoas spasm. These signs relate to the appendix itself. In cases of chronic appendicitis there is another point of tenderness: over the fused ganglions of the lumbar sympathetics on the right side, located to the right of and a little below the navel. This sign is not present in acute cases, but is present in chronic cases. In adults, chronic appendicitis may be classified under four separate categories: one low grade infective and three noninfective, irritative lesions. These have no relation to one another, except geographically. In the adult, the irritative lesions are in scarred remains of appendixes, in appendixes undergoing fibroid involution, and in cases of lymphoid hyperplasia. In children we can usually leave out two kinds of chronic appendicitis, leaving us with one low grade infective lesion and one irritative lesion. The irritative lesion seen in children is lymphoid hyperplasia. This is seen in children with so-called lymphoid diathesis. Hyperplasia of the lymphoid soft tissues within the outer container of sheath of peritoneum causes the symptoms, because the soft tissues within the outer peritoneal sheath cannot expand any more than one can unfold an umbrella without first removing its sheath; therefore, there is pain, colic, and disturbance of the abdominal sympathetics, with tenderness on deep pressure, not at McBurney's point but at the site of the fused ganglions, a little to the right of and a little below the navel. That disposes of the irritative lesion question. The chronic infective lesion is frequently due to some associated chronic infective process in the mucous membrane in the vicinity; but in these cases, as well as in the chronic irritation cases, the tenderness is not at McBurney's point so often as over the right fused ganglion.

DR. E. C. JUNGER, Soldier, Iowa: Dr. Bolling says that the greatest number of cases of appendicitis can be found in children between 1 and 5 years of age. I do not deny these statistics, but there must be some difference in localities. I have not had a case of appendicitis in a child under 5. Dr. Mixter of Boston takes up appendicitis in children over 5. That also is rare in my neighborhood.

DR. C. G. MIXTER, Boston: One point is of importance in the diagnosis of acute appendicitis in childhood: With pressure on the left side of the abdomen there is referred pain in the right iliac fossa. When this is present, it clears up an otherwise obscure diagnosis. In regard to Dr. Veeder's statement as to the prevalence of so-called pinworms, I believe that they have a definite bearing on the etiology of appendicitis in children in certain cases. The diagnosis of chronic appendicitis has to be made by exclusion. I want to emphasize the necessity of a very careful diagnosis by exclusion, to avoid unnecessary appendectomy. We should not, however, hesitate to make a diagnosis when indications are present, because if peritonitis ensues, there develop extensive pathologic changes in the abdomen, which might have been avoided by early appendectomy.

ELECTRICITY IN DERMATOLOGY *

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The percentage of dermatologic cases in which electricity is used naturally varies with the individual practitioner. One resorts to roentgen rays for acne, while another relies on keratolytics and vaccines; one prefers carbon dioxid snow or trichloracetic acid for certain benign new growths which another treats more confidently with the electric needle or the galvanocautery. The experience of a single observer is, therefore, not conclusive.

While my own records show that 47 per cent. of all office patients receive electrical treatment in some form, it is not claimed that they furnish an index of the ideal. It is not to be expected that there will be constant agreement as to the choice of the electrical agent for a given case, in which any one of several accomplishes the same result, and in which an equivalent effect is possible without recourse to electricity at all.

The principal forms of electricity used in dermatology are the galvanic current, roentgen rays, ultraviolet rays and the high frequency current.

THE GALVANIC CURRENT

The galvanic current may be employed directly or indirectly. Direct application is effected: (1) in the utilization of its essential electrical qualities, as when the current is allowed to act with one pole over the spine and the other over the diseased area, as in scleroderma; (2) when electrolytic action is desired, as in the destruction of hairs, nevi, etc., and (3) in the introduction into the tissue of ions of various kinds, such as zinc, copper and mercury. Indirectly, the galvanic current is used in generating the heat for one of the most serviceable instruments in dermatology, namely, the galvanocautery.

By far the most interesting personal experience that I can relate concerning the results obtained with the galvanic current occurred in the case of a man about 30 years of age, who complained of loss of hair associated with extreme dryness of both hair and scalp. This, of course, is an unusual picture. So pronounced was the dryness that no amount of oil or grease seemed sufficient to restore any luster to the hair. Within twenty-four hours after a most liberal application, the hair seemed as dry as if no oily substance had been used. And yet, after a few applications of the galvanic current, the hair took on a normal luster in a definite zone about 2 inches wide extending over the parietes from ear to ear. What the final results would have been in this case will never be known, for the patient was lost to view as a result of the San Francisco fire.

In all fairness, the only comparable case that I have ever had under my care should be mentioned. The patient was a German girl, a domestic about 25 years of age. She, too, complained of falling hair associated with extreme dryness. Several years previously, in an effort to save what she could, she had had the hair cut short. After this, she observed that the hair had ceased growing. However strange and unlikely the history appeared, there followed a period of observation which gave abundant opportunity to confirm it. The actual fact turned out to be that a condition of complete inertia existed. In a matter of two months, the hair did not become appreciably longer.

In that particular era, the high frequency current was in favor. It was accordingly applied, especially on the occipital region. Within a few weeks, the hair showed definite growth over two symmetrically disposed areas, one at the right and the other at the left of the occiput. Not only did the hair increase in length in these places, but it appeared brilliantly lustrous as compared with the surrounding hair. Gradually, the two circles expanded and merged into one another. Ultimately, the entire scalp seemed normal, and the wig was abandoned.

These two cases represent probably the most striking responses to electrical treatment that I have ever observed. They are at least suggestive of a wider field of usefulness for stimulation of the scalp by these means.

Comparatively little has been written by American dermatologists on the subject of ionization. Macleod seems to esteem it highly in several diseases, and recommends its use with zinc as the most uniformly successful of all remedies in the treatment of lupus erythematosus. He applies a small piece of lint saturated in a 2 per cent. solution of zinc sulphate to the lesion. On this, he places a flat zinc block electrode attached to the positive pole. The negative pole (a metal cylinder covered with chamois skin and dipped in a saline solution) is grasped by the patient and a current of from 2 to 5 milliamperes is allowed to pass for about fifteen minutes. The immediate result is a marked blanching of the tissues.

ELECTROLYSIS AND THE GALVANOCAUTERY

The subjects of electrolysis and the galvanocautery should be considered jointly, since their respective indications are often interchangeable. Electrolysis is the treatment *par excellence* for superfluous hair. Nothing need be said here concerning the technic. Excellent articles covering this and other phases have recently been published by Highman and by Williams. Probably we are all in accord that in those cases in which coarse hairs disfigure the face and destroy all the mental tranquillity of our feminine patients, we must do our utmost toward furnishing a modicum of physical as well as mental relief. Our selection of cases should be judicious, for we must resist all entreaties from those who insist on the removal of down. Above all, we must be firm with those who have heard of the magic of the roentgen rays but have never seen the damage that has resulted from their improper use.

Aside from the destruction of superfluous hairs, there are several other conditions in which electrolysis may be used with excellent results, particularly in non-elevated nevi. In my own experience, I have noted a definite tendency to use the galvanocautery, even for

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such lesions as spider nevi and sometimes for the dilated capillaries of rosacea. These are usually considered as particularly amenable to treatment by electrolysis. In dealing with these fine capillary lesions, a very delicate cautery tip is essential. The particular instrument that has made me an advocate of this treatment is one that was brought to me from Paris by my friend Kilroy of Springfield. It is formed by drawing a fine strand of platinum wire into a loop with the two sides of the loop so closely parallel that it presents more nearly the appearance of a needle. It is, in effect, something coarser than the microburner (microbrenner) of Unna, and finer than the most delicately fashioned cautery tip I have ever found in any American shop. Using this tip, I have such good results in spider nevi that treatment with electrolysis never occurs to me.

In the case of hairy nevi, the needle is preferable, although, in certain cases, it may be used in conjunction with the galvanocautery. If there are only two or three hairs, they may be destroyed individually by the needle, leaving the remainder of the mole to be treated with the galvanocautery. This insures the finest cosmetic result, since, with the hairs removed, it is possible to destroy what is left with the galvanocautery, limiting its action to the depth of the mole. If the hairs are numerous, the best results seem to be attained with the needle making several punctures downward and inward from the periphery. This causes destruction of a wedge shaped piece of tissue, with a consequent slough and a soft, inconspicuous scar.

In the treatment of the enlarged capillaries seen in rosacea, the choice between the needle and the finely pointed cautery tip seems to me to be based on the personal preference of the operator. Unquestionably, it is difficult to guide the nearly white hot point along the course of the sometimes tortuous blood vessel at exactly the proper depth. The tolerance of the patient, also, plays a part. With a surprising number of patients, however, I have had most satisfactory results with the cautery, and probably I choose this method ten times as often as the needle.

In no single condition has the treatment with the galvanocautery been more gratifying than in xanthelasma. Several years ago, Hazen read before the American Dermatological Association a paper on the electric cautery in cutaneous surgery. In the course of the discussion, as I recollect, Pusey referred to this use of the galvanocautery, crediting Kilroy with the suggestion. Prior to this, I had been using the needle, and one of my cases recurring after such treatment had caused me considerable chagrin. Since then, I have never used anything but the galvanocautery, and to this date I have seen no single recurrence and nothing but satisfactory cosmetic results.

In granuloma pyogenicum, both the galvanocautery and roentgen rays are effective. In molluscum contagiosum, the galvanocautery speedily ends the trouble. For a great variety of benign new growths, this treatment is simple and effective. In small, pedunculated tumors, the use of a tip shaped like a knife blade makes bloodless surgery. Even in the small, nonpedunculated lesions, the blade may be applied in short, successive strokes around the circumference, and the growth removed with practically no resultant scar. Cutaneous horns and certain keratoses are most effectively treated with this agent, and it has been used successfully in lupus vulgaris, cancer and rhinophyma.

In the treatment of small growths, the question of using a local anesthetic sometimes arises. It has always seemed to me that, properly performed, the ordinary operation causes no more pain than would result from the puncture of the hypodermic needle. Occasionally, depending on the subject or the lesion, some procain is clearly called for, but it is surprising how easily the cautery is tolerated, if only the operator takes the time to proceed slowly with many short contacts instead of attempting to finish the work in a moment.

The advantages of the method are that there is no bleeding, practically no chance of infection, no after-treatment, and good cosmetic results. As a possible disadvantage should be mentioned the remote chance that hypertrophic scars may result. I have seen this happen twice, once in my own practice. For this reason, it would seem advisable, if one contemplates the removal of multiple lesions, especially on the face, first to test the possibility of such complication by operating on a single lesion, in order to observe the result before undertaking the treatment of the remaining lesions.

ROENTGEN RAYS

The roentgen ray has been used in the treatment of skin diseases for more than two decades. It is twenty years since Sabouraud and Noire described their technic for the treatment of ringworm of the scalp, using pastilles for measuring the dosage. Reading Pusey's retrospective article concerning the use of the ray in this period, one is impressed with the completeness with which the indications were understood at the outset. The pioneer work of MacKee in standardizing dosage has been of incalculable value in establishing roentgen-ray therapy in the position it occupies today.

It is not the purpose to enumerate here all the conditions in which roentgen rays are indicated; nor is it necessary to speak of technic. The entire subject has been covered recently in comprehensive papers by Highman and Rulison and by Howard Fox. There are, however, certain general considerations worthy of brief notice.

First is the fact that while the action of the ray is in a sense precise, there is nevertheless an unknown quantity with which we are continually called to reckon. We know, for example, that on the normal skin the ray, in repeated fractional doses, will cause increase in pigmentation, diminution in size of both sweat and sebaceous glands, and destruction of elastic tissue: that on certain new growths it will act destructively before attacking normal tissue. What we cannot explain to our own satisfaction is why identical doses applied to plainly parallel conditions do not react always in the same way. In psoriasis, for example, we find that some lesions melt rapidly away while others are apparently intractable. In the case of warts, certain ones disappear while others directly beside them are apparently uninfluenced. Perhaps it is not necessary to explain this; it may be sufficient to recognize in it the simple manifestation that we see every day in respect to other remedies; namely, that they are effective in only a certain percentage of cases. It does not matter whether we account for it on the ground of immunity or of idiosyncrasy. In the case of roentgen-ray therapy, however, it raises a point that is of prime importance. If a given lesion is once treated with a fair dosage and with no response, the treatment should be abandoned forthwith.

Worth consideration also is the reaction that is occasionally observed in treating acne. After several exposures, there sometimes is noticed an accentuation in the pustulation, and I have seen a comparable reaction in the form of a slight folliculitis in the healthy

area surrounding a patch of eczema which had been exposed to the ray along with the eczema.

From the discussion that has followed several of the recent papers, it appears that considerable difference of opinion exists concerning the relative merits of the roentgen ray and other remedies, either electrical or nonelectrical, in certain diseases. There are some who apparently prefer vaccines to the roentgen ray for acne, and some who prefer the ultraviolet rays to either. There are likewise some who prefer the ultraviolet rays to roentgen rays in psoriasis. Perhaps the discussion of this paper will help in crystallizing our views. For myself, I am ready to acknowledge the conviction that the roentgen ray is not only the best remedy at our command for acne, but also practically a specific. In respect to psoriasis, I feel that it is worthy of trial in selected cases, and that, if we check up on a sufficient number of cases, we shall find that it is at least as efficient as any other remedy.

The point that should be emphasized in every discussion of roentgen-ray therapy is the need for a proper appreciation of the relationship between the action of the agent we employ and the pathology of the condition we are treating. If, in the early days, there was reason for empiricism, there is none today. The use of the roentgen ray in the hope or belief that it may be of use in a given dermatosis, regardless of the pathologic changes involved, is indefensible. The use of roentgen-ray machines by mere technicians, except under responsible direction, is to be condemned.

ULTRAVIOLET RAYS

In generating ultraviolet rays, two types of lamp are used, the air cooled quartz mercury vapor lamp and the water cooled quartz mercury lamp. The former is commonly known as the Alpine and the latter as the Kromayer lamp.

Much has been written in vague terms concerning research with these rays, but little of practical applicability has been developed.

In the actual treatment of skin disease, certain indications have been developed. Concerning its value in some dermatoses, there is practical unanimity; as to its virtue in others, there is more divergence of opinion. If any generalization is warranted, it would seem that the air cooled lamp is of service in the more superficial lesions, while the water cooled lamp is to be preferred in deeper seated affections.

My own experience furnishes a limited confirmation of this distinction. So far as I have been able to observe, the Alpine lamp is of service only in the superficial type of lesion. In parapsoriasis, it has been remarkably effective, causing disappearance of the lesions in four cases. In psoriasis, it has been of help in some cases but, on the whole, it is not to be compared with either the roentgen ray or even chrysarobin. In certain squamous eczemas, it has given satisfaction. In pityriasis rosea, it has been of distinct service. In alopecia areata, it has not given results that were appreciably better than with other forms of electrical treatment, and there exists in my mind grave doubt that it will cause hair to grow any more quickly than will the application of a good chemical stimulant.

Certain writers have lauded the ultraviolet rays in acne. Apparently, it is necessary to use it to the extent of securing desquamation. Unquestionably, a good peeling is one of the most effective measures that can be taken in this disease, but most of us would prefer the imperceptible and painless method with resorcinol.

The reports of good results with the Kromayer lamp deal mostly with tuberculosis of the skin, lupus erythematosus of the chronic discoid type, port wine marks, angioma serpiginosum and the thickened patches of eczema, psoriasis and lichen. With the exception of lupus erythematosus, angioma serpiginosum and port wine marks, it is probable that as good or better results may be obtained with the roentgen ray.

It seems apparent, then, that the field for this therapy is limited, although it may be freely granted that it contains interesting possibilities.

THE HIGH FREQUENCY CURRENT

The high frequency current has been used in dermatology chiefly in two forms, one by means of the application of a glass vacuum electrode and the other by the discharge of a spark from a pointed metal electrode. That the former is capable of causing good results I have already testified. It is quite probable that the use of such an electrode will be of service when marked stimulation is desired. It has unquestionably been of service in many cases of chronic eczema, lichen simplex chronicus and alopecia areata. The chief reason that I have practically abandoned its use is that, in some cases, the roentgen ray has supplanted it and, in others, its successful application involves too many visits by the patients.

Treatment by fulguration, while notably successful in certain hands, has never appealed to me since in most cases, the same results seem to be obtainable with less pain and more certainty with the use of the galvanocautery and the roentgen ray.

Probably the glass vacuum electrode is much less used in dermatology than it was ten or fifteen years ago, while the use of metallic tips for fulguration is possibly greater.

CONCLUSIONS

1. Electricity plays a major rôle in the treatment of skin diseases.
2. The galvanic current, in its direct and indirect applications, is of capital importance. Probably its full measure of usefulness has not yet been attained.
3. The roentgen ray, in proper hands, is the most valuable therapeutic agent in dermatology.
4. Ultraviolet light is useful in a limited number of dermatoses, and holds promise for the future.
5. The use of the high frequency current with glass electrodes is declining, for the reason that nothing is accomplished thereby that is not more easily or expeditiously affected by other methods. In selected cases, treatment by fulguration is unquestionably of value.

ABSTRACT OF DISCUSSION

DR. HOWARD FOX, New York: I was glad to hear Dr. Chipman speak favorably of the galvanocautery, agreeing with the opinion of Dr. Pusey and Dr. Hazen. I use the electrocautery more and more in place of electrolysis for destroying superficial lesions. Electrolysis is, of course, the only method that gives permanent and safe results in hypertrichosis. I agree with the author that at present the roentgen ray is the most valuable single agent we have for treating skin diseases. Its versatility is shown in its usefulness in certain inflammatory diseases, infectious granulomas and neoplasms. I was glad to hear Dr. Chipman say that its use should be discontinued when it fails to cause definite improvement after a reasonable trial. The use of the roentgen ray in hypertrichosis should certainly be condemned. I agree heartily with most of MacKee's opinion on roentgen-ray therapy. I cannot, however, share his apparent optimism regarding sycosis. Some acute cases responded very satis-

factorily to this treatment; but in some of the chronic cases, especially in run down persons, we have had very little success. This has been especially true of some severe cases seen in ex-soldiers since the war. I feel that quartz lamps have a certain definite but very limited value in dermatology, though their reputation has been injured by too enthusiastic claims. I cannot see the rationale of using these lamps for scalp diseases when the hair is thick, as the penetration of these rays is slight, being stopped by a thin piece of paper.

DR. I. L. MCGLASSON, San Antonio, Texas: Some time ago the president of our state health board sent me a letter from a man in New York who wanted to put a roentgen-ray machine in a beauty parlor, to treat hypertrichosis. Our state health officer wished to know about this. I told him that no reputable physician was treating hypertrichosis by that means. I sent the letter to Dr. MacKee, and he reported back that there was such an institution in New York and that some doctor from up state, I think in Yonkers, was probably paid for the use of his name. So far as Dr. MacKee could find out, they had no particular knowledge concerning roentgenotherapy. They are trying to put this machine into as many beauty parlors in Texas as possible, and we are trying to keep them out. I think that we should all try to keep these things out. I have no fight with the beauty parlors, for they can shampoo hair and take care of nails and do a good many things that are of value; but they should not attempt to treat hypertrichosis with roentgenotherapy. I wonder whether it would not be well for Dr. Pusey to investigate this matter for the whole country and try to help us to keep these machines out.

DR. HARRY G. IRVINE, Minneapolis: Many people are practicing dermatology who are not equipped with all the apparatus Dr. Chipman describes. We have seen many cults develop because the physicians do not make use of all things of value, and I think it is a mistake for dermatologists not to have these things on hand and to make use of them. I wish to emphasize the use of the violet ray, or Alpine lamp, in the treatment of pityriasis rosea. In our hands it has been very valuable. Usually it takes many weeks of treatment with undesirable ointments and so on to clear up this disorder. Many think it is self-limited and that no treatment is necessary. In our hands we have been able to stop it in a week or ten days, with no effect other than a slight tanning from the ray. It clears up the disorder very rapidly, and I think it well worth while.

DR. R. C. JAMIESON, Detroit: Dr. Chipman is to be commended for bringing to our attention a remedy that we all know about but very often lose sight of. We often use new remedies of various kinds and lose sight of the different types of these things. Those who have used electricity in its various forms, the roentgen ray, the ultraviolet light, the cautery and so on, have become so accustomed to it that they would rather continue their use than to take up electricity in various other forms. It is perfectly true that beauty parlors, charlatans and people of that type have a tendency to stress electricity in its various forms of treatment, and I think that Dr. McGlasson's point is well taken that the use of electricity by these beauty parlors and charlatans should be controlled by legislation. The manufacturers of these appliances claim that no damage can be done; but all of us have seen great damage (sometimes permanent damage) done by people who have had no experience with these methods. I have seen ulcers which have lasted for many months from too long continued application of the Alpine light. The damage did not compare with that possible with roentgenotherapy, but there was great damage, inconvenience to the patient and worry to the operator, and this can be caused by the injudicious use of the ultraviolet ray by inexperienced operators. I agree that the roentgen ray has the greatest field of usefulness of any single agent. Dr. Chipman spoke of the occasionally resulting keloid scar in the removal of small growths, especially about the face, and suggested the use of fulguration, or whatever method is used, on some other part of the body first to see whether there would be a keloidal scar. I think that this point is well taken. With the present types of fulguration, I believe that this method has a very wide field of usefulness. It has become much less painful, and with the use of a little procain it can be made practically painless and small growths of various types can be easily and quickly removed.

DR. WILLIAM ALLEN PUSEY, Chicago: I am glad that attention has been brought to these things by Dr. Chipman. Of course, however, these are not electric methods for the most part. The electrocautery is not, nor is the roentgen ray. The interpretation of Dr. Irvine's remarks would seem to mean that we should keep in our office a supply of all the various implements and instruments that are suggested for dermatology. I would question that very much. Men should put in only the things that are likely to be of use to them. I have gone over the lists here in my mind of what are the useful things for us. In the first place, one should have a roentgen-ray machine and then a galvanocautery, even if he has nothing else but a desk. Then he should have a little radium, if only a few milligrams, and for very, very few uses some form of ultraviolet light. But if he is hard up or just beginning to practice and cannot afford the ultraviolet machine, he need not feel that he is depriving his patients of a very useful means of treatment. I should advise a considerable amount of caution in the selection of electrical apparatus. I do not think we need to worry about beauty parlors. Those people who smear the face with various ointments, or titillate the scalp in various ways, have no more connection with us than the white-washer has with the artist. In the treatment of pityriasis rosea I do not think I would spend one dollar for anything with which to treat it. I think it is not in accord with what we know of the disease. There is a pityriasis rosea that goes away quickly and pityriasis rosea that goes away slowly; and after we once make the diagnosis it usually goes away by itself. Except in the cases with marked itching, it does not make much difference if one does nothing for the trouble. The most important matter to stress is the use of the galvanocautery. Since Kilroy called my attention to its great usefulness ten or twelve years ago, I have used it continously. I believe it is not necessary to give this a preliminary burning to see whether it will produce a keloid. The risk of keloid, in my experience, from the use of the cautery is practically nil. As to the pain, I think the patients stand it fairly well. I tell my patients that I will stop when they want me to, and then just peck along as long as they are willing to let me. The odor can be kept away with an electric fan or by an assistant with a blow pipe.

DR. WILLIAM H. GUY, Pittsburgh: I feel inclined to advocate caution in the use of the roentgen ray for lupus erythematosus. Particularly I wish to quote Dr. Highman as to the similarity of radiodermatitis and lupus erythematosus from a histologic standpoint. My own experience with lupus erythematosus is that the roentgen ray is not only not of service but will aggravate the condition. In the discoid type I occasionally find that a radium plaque, unscreened, except by a very thin film of rubber, is of value in lessening the scale. I feel that if this is a general observation, the effect is likely due to the superficial effect of beta rays. Certainly lupus erythematosus is one of the most difficult things we have to treat, one in which we use many remedies, and I would prefer to use for local therapy such remedies as carbon dioxid snow and superficially acting chemicals that we know will not produce permanent, disagreeable after-effects.

DR. HAROLD N. COLE, Cleveland: I have had one or two disastrous results with keloid formation as the result of the electrocautery, which we use a great deal. Thanks to a paper on keloids and their treatment by radiotherapy read by Dr. Pfahler, we have used the roentgen ray after the cautery for growths 1 cm. in size or larger. If they are larger, we use a screened dose; but if not, we use it unscreened. We have since had no more keloids.

DR. ERNEST DWIGHT CHIPMAN, San Francisco: It was to be anticipated that some purist would object to the inclusion of the galvanocautery within the province of electricity. Certainly, in a strict sense, it more properly belongs with the agents used in physiotherapy. The title was adopted as a convenient way of bringing into one group treatments by any form of apparatus that involves the use of the electric current.

EFFECT OF TORREY'S PANCREATIC EXTRACT ("GLYCOSIN") AS A SUBSTITUTE FOR INSULIN

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Since the discovery of insulin, diligent effort has been made to find other modes of administration than by hypodermic injection. Experiments have been made in giving insulin by mouth and by rubbing it into the skin. While some effect can be secured in several of these ways, that effect has been relatively slight and always so inconstant as to exclude practical application of the method for the present. Probably the most hopeful results are contained in the reports of Murlin, Sutter, Allen and Piper,[1] who gave insulin in combination with a weak acid in the form of enteric coated tablets. In the wake of these careful scientific studies, there has been naturally a revival of the claims made for various nondescript preparations of pancreas. With these we are not concerned. They were tested years ago and found worthless, and the numerous testimonials sent out by their manufacturers are remarkable for the absence of any name connoting knowledge of diabetes or, indeed, of medicine.

Some of the recent attempts to separate from the pancreas a substance which, orally administered, might be efficacious in the treatment of diabetes seem honest, and on that account they were taken under consideration and given trial. One of these received some notice a year ago, and, since the reports seem to have been misleading in the light of our experience, the charts of two cases treated in the New York Hospital are given.

Unless one is familiar with diabetes in general, and the peculiar reactions of diabetic patients, there is a considerable probability of being misled by the effects of combined therapeutic experiments. The disease is very often mild, sometimes so mild that trivial readjustments in diet arrest glycosuria. Even patients who have been in diabetic coma, due to some transient upset, may a few months later tolerate a diet that is quite adequate and maintain a normal blood sugar content. Again, some patients can tolerate only a meager diet for months and then, owing to some change that is obscured, acquire the ability to utilize a slowly augmented diet, and gain in strength and weight until the conditions of disease are entirely changed. For these reasons, therapeutic experiments are reliable only when conducted in cases that have been adequately studied and are known to be severe, and each new therapeutic measure must be preceded by a period of relative equilibrium under the old conditions.

TABLE 1.—*Comparative Results of the Use of Torrey's Extract and Insulin in Case 1*

		Urine					Diet				
Date	Weight, Pounds	Volume, C.c.	Per Cent.	Grams Sugar	Acetic Acid	Diacetic Acid	Blood Glucose	Carbohydrate	Protein	Fat	Calories	Insulin
3/14	124	1,210	0.7	8.5	0	0	0.220	40	50	130	1,530	40 units
3/15	...	1,980	0.13	2.7	0	0	.....	40	50	130	1,530	40 units
3/16	...	1,000	0	0	0	0	.....	40	50	130	1,530	40 units
3/17	...	1,750	0.28	4.8	0	0	0.187	40	50	130	1,530	45 units
3/18	127	1,900	1.3	25.0	0	0	.....	40	50	130	1,530	45 units
3/19	...	1,940	0.9	18.0	0	0	.....	40	50	130	1,530	45 units
3/20	...	1,450	0.5	7.2	0	0	.....	40	50	130	1,530	45 units
3/21	...	1,445	0.7	10.0	0	0	.....	40	50	130	1,530	45 units
3/22	...	1,100	0	0	0	0	.....	40	50	130	1,530	45 units
3/23	...	1,800	0	0	0	0	.....	40	50	130	1,520	Torrey extract 120 grains
3/24	...	1,000	0.45	8.5	0	0	.....	40	50	130	1,520	Torrey extract 120 grains
3/25	...	1,930	0.7	13.7	0	0	.....	40	50	130	1,520	Torrey extract 140 grains
3/26	...	2,270	1.2	28.0	+	0	.....	40	50	130	1,520	Torrey extract 140 grains
3/27	...	2,220	0.2	5.4	0	0	.....	40	50	130	1,530	Insulin, 50 units
3/28	...	1,150	0.13	1.5	0	0	.....	40	50	130	1,530	Insulin, 60 units
3/29	125	1,980	0	0	0	0	.....	40	50	130	1,530	Insulin, 45 units
3/30	...	1,850	0	0	0	0	.....	40	50	130	1,530	Insulin, 45 units
3/31	...	2,400	0	0	0	0	.....	40	50	130	1,530	Insulin, 45 units
4/1	...	1,950	0	0	0	0	0.147	40	50	130	1,530	Insulin, 45 units
4/2	...	1,600	0	0	0	0	.....	40	50	130	.....	Insulin, 30 units

TABLE 2.—*Comparative Results of the Use of Torrey's Extract and Insulin in Case 2*

		Urine				Blood		Diet				
Date	Volume, C.c.	Per Cent.	Grams Sugar	Acetic Acid	Diacetic Acid	Glucose	Carbon Dioxid	Carbohydrate	Protein	Fat	Calories	Insulin
3/22	500	2.0	10.0	0	0	0.161	48	40	40	120	1,400	5 units twice a day
3/23	800	0	0	+	0	.....	..	40	40	120	1,400	5 units twice a day
3/24	800	0	0	+	0	.....	..	40	40	120	1,400	5 units twice a day
3/25	810	0.12	0.9	++	0	0.131	..	40	40	120	1,400	5 units twice a day
3/26	700	0	0	0	0	.....	..	40	40	120	1,400	5 units twice a day
3/27	950	0	0	0	0	.....	..	40	40	120	1,400	5 units twice a day
3/28	945	0	0	++	0	.....	..	40	40	120	1,400	5 units twice a day
3/29	1,100	0.14	1.54	+++	0	.....	..	40	40	120	1,400	None
3/30	900	0.4	3.6	+	0	.. ..	..	40	40	120	1,400	Torrey extract
3/31	1,400	0.3	4.2	+	0	.. ..	..	40	40	120	1,400	Torrey extract
4/1	1,450	0.4	6.8	+	0	.. ..	..	40	40	120	1,400	Torrey extract
4/2	1,150	0.5	5.7	+	0	.. ..	..	40	40	120	1,400	Torrey extract
4/3	1,450	0.5	7.3	+	0	.....	..	40	40	120	1,400	7 units insulin twice a day
4/4	650	0.4	2.6	++	0	.....	..	40	40	120	1,400	10 units insulin twice a day
4/5	700	0	0	0	0	.....	..	40	40	120	1,400	10 units insulin twice a day
4/6	750	0	0	0	0	.....	..	40	40	120	1,400	5 units insulin twice a day
4/7	1,200	0	0	0	0	.....	..	40	40	120	1,400	5 units insulin twice a day
4/8	700	0	0	0	0	0.071	..	40	40	120	1,400	5 units insulin twice a day

1. Murlin, Sutter, Allen and Piper: Proc. Soc. Exper. Biol. & Med. 21: 338, 1924.

It was probably failure to recognize these factors which misled Torrey [2] into the belief that his preparation of pancreas lowered blood sugar and controlled glycosuria.

The extract for which the name "Glycosin" has been suggested by Torrey, because of glycolytic action observed by him, is made from pancreas. The details of the mode of preparation have not yet been published.

REPORT OF CASES

CASE 1.—J. G., a man, aged 49, a carpenter, in April, 1922, had gone to a hospital on account of boils and then learned that he had diabetes. He had noted loss of weight and frequent urination. On discharge from the hospital, he had been advised to take a meat and green vegetable diet, but as he did not gain strength, and continued to lose weight, he had not adhered to the diet. He entered New York Hospital in February, 1924, much emaciated and weak. The urine contained large amounts of sugar, and the blood sugar was 0.319 per cent. He was given a maintenance diet, and, as sugar was still present in the urine after ten days, insulin treatment was started. Only the essential part of the chart need be given. It will be noticed that the diet was the same throughout (a weighed diet). March 23, insulin was stopped, and Torrey's pancreas extract substituted for four days. There was a return of glycosuria, which increased day by day until insulin was resumed, March 27.

CASE 2.—B. B., a woman, aged 22, entered the hospital, March 22, early in the course of diabetes, and was given a diet that remained the same throughout the experimental period. Glycosuria was controled by insulin until March 29, when no insulin was given, and a return of sugar resulted. Torrey's extract was given in 100 grain (6 gm.) doses from March 30 to April 2, with a slowly increasing glycosuria, until it was checked by resuming insulin.

In none of our observations was there any effect noticeable other than would have been expected after insulin was discontinued.

My colleague, Stanley R. Benedict, reports that oral administration of the Torrey preparation to a dog was without influence on the concentration of the blood sugar. The dog weighed about 10 kg., and received three times the human therapeutic dose of the pancreas preparation, in water through a stomach tube. During the following three hours there was no change in the blood sugar. The observations were not continued.

121 East Sixty-Second Street.

2. Torrey, E. W.: Am. J. Electrotherap. & Radiol. **41**: 319 (Oct.) 1923.

General Paralysis.—Histologically, general paralysis is characterized by widespread infiltration of lymphocytes and plasma cells in the perivascular spaces of the brain vessels with usually a greater or less amount of brain cell destruction, and accompanying neuroglia replacement. Most cases do not come to necropsy until the psychosis has been established for a long time, and they usually show marked parenchymatous changes in the brain. In very early stages, however, the perivascular lesions are well marked but the brain destruction is often mild. In one case with violent death within eight days of the onset of mental symptoms, typical perivascular exudate was found, but no evidence of brain cell damage beyond those changes which are constantly associated with all exhaustive, infective and toxic deaths. In a large proportion of cases, the lesions are well developed over the field of distribution of the branches of the carotid arteries, but are so mild over the occipital pole—that is, the field of the basilar branches—as to render diagnosis difficult or even impossible. In fulminant or very slow cases, the whole brain is about equally involved, and very rare cases (general paralysis of Lissauer) occur in which the occipital pole is hard hit and the rest of the brain only slightly involved.—Orton, S. T., *J. Iowa State M. S.* **14**:351 (Aug.) 1924.

MOBILIZATION OF JOINTS WITH BONY ANKYLOSIS

AN ANALYSIS OF ONE HUNDRED AND TEN CASES *

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Operations for the restoration of function in joints with bony ankylosis have not as yet become standardized, but the success attained within recent years by a small number of surgeons in Europe and America shows decided progress in this field of surgery. In general, there is a paucity of facts regarding technic, after-treatment and results, and there is also a confusion of methods employed, as evidenced by a recent symposium before the International Society of Surgery.[1] Groves compiled, from twenty English surgeons, 182 operations, but from an analysis of these it is apparent that ninety-two were excisions or so-called nearthroses, and only ninety could be classed as true arthroplasties, by which is meant a surgical procedure to reconstruct the component parts of a normal joint, and not the removal of a mass of bone for the sole purpose of producing pseudarthrosis or an ununited fracture. Unfortunately, the American opinion has also been molded by data compiled from many sources, and often the procedure has been condemned by surgeons whose experience is limited to a small number of failures. In consequence, it was thought that an analysis of 110 arthroplasties, from personal records, might be of interest with a view of demonstrating, not alone the motion secured, but also the durability of such joints after the elapse of a number of years, which, after all, is the crucial test as to the value of any surgical procedure.

No attempt will be made to review the literature, as this has been ably done by W. R. McAusland of Boston; however, frequent reference will be made to my previous contributions on this subject.

The scope of the procedure increases with the experience of the surgeon, though care must be exercised in the selection of cases. The following pathologic conditions encountered in ankylosed joints decrease the chance of success or actually contraindicate surgical measures:

1. In no case of tuberculosis should a joint be entered for the purpose of mobilization when tuberculosis was the causative agent in the production of the ankylosis. Undoubtedly, it might be possible to obtain excellent results in some instances, but the probability of "lighting up" a latent tuberculous focus is well known, and should be a sufficient warning against surgical measures.

2. In cases in which a destructive osteitis, in early life, has obliterated the epiphyses, and a materially shortened extremity is encountered, mobilization of a joint would not be of sufficient advantage to justify the means.

3. Extensive scar tissue, binding the skin to the bone, requires preliminary plastic procedures.

4. In extreme muscular atrophy, with reorganization of bone structure, as is seen when a bony ankylosis has existed over a long period of time and the medulla has become continuous through the joint, as from the ankle to the knee, sufficient base would not be found to recon-

1. Groves, E. W. H.: Arthroplasty, Brit. J. Surg. **11**: 234 (Oct.) 1923.

* Read before the Section on Surgery, General and Abdominal, at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

struct a functional joint; besides, the open medullary canal might be a factor to be considered. The muscular apparatus would also be extremely atrophic and its restoration difficult.

5. Old, dense eburnated bone, when found for a considerable distance on both sides of the joint, is not favorable soil for the production of a movable joint. Such a condition is usually caused by an extensive virulent osteomyelitis, the result of which is a low grade bone tissue, bearing the same relation to normal bone that scar tissue does to normal soft tissues. In fact, healthy, spongy bone should compose the articular surfaces of the new joint; consequently, the chance of success is very slight when the structure of the bone has been transformed for 1 or more inches beyond the joint line.

6. All evidence of an acute infection must have subsided before the institution of operative measures; this is a well known surgical principle.

7. All evidence of osteoporosis or bone atrophy must have disappeared, with a restoration of the normal bone, before the procedure should be considered.

In fact, surgical operations for the purpose of mobilization are rarely, if ever, permissible except when ankylosis has been caused by two conditions: (1) trauma, crushing of joint surfaces, tearing of the periosteum or multiple fractures; (2) acute infectious arthritis caused by staphylococcus, streptococcus, pneumococcus, gonococcus, etc. These organisms erode and disintegrate the cartilages and superficial bone of the articulations, unless the infection is in the shaft, when there is an extensive osteomyelitis and not a localized arthritis.

The technic of the operative procedure differs in individual joints, as does the anatomy and the function. In the first cases of this series, a minute duplication of the normal joint surfaces was attempted; but, after considerable experience, beset with a high percentage of failures, it was discovered that simplicity was a real asset, and that our efforts should be directed toward the reproduction of function and not mere anatomic detail; for instance, in the knee joint, one large condyle and one shallow concave tuberosity will secure a hinge joint that meets all requirements.

All operators agree that there should be an interposition of "tissue" between the raw surfaces in certain joints. Free fascia lata is by far the most commonly employed. The amount of bone excised is variable in different joints, and is influenced by certain factors in the same joint. The plastic rearrangement of the soft tissues must permit free motion, or the entire purpose of the procedure is defeated.

The indications for arthroplasty are rare in those joints in which action may be compensated by motion in adjacent articulations, as the shoulder and the ankle. The joints that respond the more favorably, in the order of their chances of success, are the elbow, jaw, knee and hip. The technic in each joint requires special consideration, but will be omitted, as the details have been previously published.

The distribution of arthroplasties, in various joints, is as follows: elbow, fourteen; jaw, six; hip, twenty-three; knee, fifty-nine; ankle, two; wrist, three; phalangeal, one, and metatarsophalangeal, two. This makes a total of 110.

These arthroplasties will be discussed collectively, after which each joint will be discussed separately. All information in the report has been ascertained by direct personal observation; no statement by letter or otherwise has been accepted, as even patients and not infrequently physicians may be deceived by compensatory motion in adjacent joints, and the improved function may be entirely due to restored anatomic alinement. Of the 110 arthroplasties, sixty were in women and fifty in men. The preponderance of women is due to the fact that more women (about 60 per cent.) submit to the operation on the knee. If the knee is excluded, there were more men who had arthroplasties in other points. Of the 110, ninety-five were due to acute infectious arthritis; one to osteoarthritis; one to tuberculosis, through error in diagnosis, and thirteen to trauma. Of the ninety-five caused by acute infection, twenty-one gave history or evidence of diseased tonsils; in thirteen of these, the tonsils had been previously excised. In ten there was evidence of oral infection, but in only five a definite focus of pus. In fifteen, gonorrhea was the source of infection; one followed pneumonia; one, typhoid; one, influenza, and one, ear infection. In the remainder, no definite foci were recorded. There was no history of syphilis and no positive Wassermann reaction. There were six arthroplasties in children with the joints in malpositions: three elbows, two knees and one hip. As it was not expedient to excise sufficient bone, only one, a knee, in a boy of 14, was successful. All, however, were benefited by the improved position. These operations are rarely indicated in children, and should be employed only with caution.

Fig. 1.—Practically normal motion in elbow after arthroplasty.

The roentgenogram of a reconstructed joint demonstrates definite bone production about the margin of the articular surface, which has been mistaken for an active proliferative arthritis, though it would hardly be possible to remodel so extensive an area of raw bone without inducing appreciable reaction on the part of the osteoblast. The argument that such changes are not commensurate with durability is hardly tenable, as the counterpart is found in many useful and apparently normal joints, the sequela of trauma or infection, which present extensive hypertrophic changes. In fact, patients past 50 often show material evidence of osteoarthritis without symptoms. The end-results of this entire group would be of little material value, as each joint presents a distinct equation. The number of

cases in the wrist, shoulder, ankle, etc., has been so small that the tabulation of results will be confined to the elbow, jaw, hip and knee.

THE ELBOW

Patients with bony ankylosis of the elbow do not submit so readily to operation as those with the same condition in other joints, though the prognosis is better.

Fig. 2.—Solid bony ankylosis of the left jaw of five years' duration: at left, prior to operation; at right, extent of motion six weeks after operation.

There were fourteen arthroplasties of the elbow, four of which gave practically normal flexion and extension, and they are classed as excellent; five obtained from 40 to 75 per cent. motion, and are classed as good. In two recent cases, the indications are that the result will be excellent. There were three failures in children, including two elbows in one child. There was no instability or muscular weakness; in this they differ from those which have been extensively excised. In several instances, there has been a gradual increase in voluntary rotation of the forearm, but we do not feel competent to speak conclusively on this point at the present time. In one hemiarthroplasty, complete rotation was conserved. There are only four in which durability may be considered; in these, six, five, three and three years, respectively, have elapsed since operation. All have been satisfactory, with no symptoms of arthritis or repeated strains. In consequence, one may conclude that the chances of success in the elbow are most favorable, conservatively speaking at least 90 per cent.

THE TEMPOROMAXILLARY

There is no joint that responds so rapidly to arthroplasty as the jaw, and in every instance the procedure should be strongly advocated, not alone for the restoration of function, but also for the eradication of oral sepsis. There were six cases; three intra-articular, and three extra-articular. Of the three intra-articular, two gave excellent results and the one only fair, that is, about 30 per cent. of normal motion, but sufficient to permit corrective dentistry. Of the three extra-articular, one gave a perfect result and two fair. The latter type is not a true arthroplasty, but is mentioned in this connection as the clinical aspects and also the after-treatment are the same. It was necessary to do a tracheotomy in one instance, after which the operation was completed with ease. A tracheotomy tube should always be placed on the instrument table.

THE HIP

Arthroplasty of the hip joint has been less satisfactory than in the knee; a contrary opinion is held by others. There were twenty-three arthroplasties of the hip joint; in six, both hips were involved, which makes the prognosis doubtful. Of the twenty-three arthroplasties, four gave excellent results, with strong, stable hips with voluntary motion from 60 to 90 degrees, and four gave good results, with motion from 30 to 50 degrees. In four, sufficient time has not elapsed since operation to reach conclusions. In four, the results are unknown. In one, death occurred from "lighting up" a streptococcus infection that had been latent for three years. In seven, there was absolute failure with relapse of bony fusion, but much benefit accrued to five of these from correction of malposition. In one, a boy of 10, drainage has persisted for six months. In one, a latent tuberculous focus became active as the result of an error in diagnosis. In all successful cases, there has been a gradual increase in function and muscular power, without symptoms of arthritis. Durability can be considered in only two cases, eight and nine years, respectively. Both show practically no disability and no symptoms of arthritis. Unfortunately, the majority of the cases have been within the last three years, and those of earlier date cannot be easily located. In well selected single hips, satisfactory results should be obtained in 60 per cent.

THE KNEE

The final results in arthroplasties of the knee, for the last four years, have been most gratifying, though the first report of twenty-four cases, before the American Orthopedic Association, in June, 1920, was not encouraging. Of the twenty-four, only five were successful (about 20 per cent.). In the remainder, ankylosis recurred, but in a corrected position with better function of the limb, which justified the procedure. In January, 1923 (before the Orthopedic Section of the New York Academy of Medicine), sixteen subsequent cases, with improved technic, were reported. Of those, four were too recent to conclude results, leaving twelve for final

Fig. 3.—Normal muscular development and function eight years after arthroplasty of the hip; extension and voluntary flexion.

analysis. Of these, ten were successful, with two failures. The range of motion was 60, 80, 80, 90, 60, 80, 50, 40, 40 and 30, respectively. Since this report, there have been nineteen additional arthroplasties of the knee that have terminated relatively in the same manner. During the last few months, a survey has been made of twenty arthroplasties of the knee, in which permanent voluntary motion, ranging from 40 to 130 degrees,

Fig. 4.—Practically normal flexion and extension eight years after arthroplasty of the knee.

has been secured. Of these, sixteen are satisfactory, with no symptoms of arthritis and efficient as to service. In three, there was slight instability, and in one, apparatus was deemed advisable, though by no means essential to walking. In two of these, complete bony ankylosis had existed for seven and eight years, respectively, with incident muscular atrophy. At the time of operation, the bone was normal and firm; but, as muscle power was weak, delaying function, osteoporosis ensued, with atrophic changes and a flattening of the articular surfaces on weight bearing, which subsequent experience has taught could have been avoided by intensive muscular training, physiotherapy and gradual increase in weight bearing by the aid of the Thomas caliper splint. These patients are well pleased with the results, as compared to their former state; however, I do not regard instability of even an appreciable degree permissible, and cannot classify a case as successful unless, by muscle training, stability can be restored. In one case, that of a large fat woman with weak muscle stamina, a flail joint resulted, requiring operative treatment and apparatus. As has been previously emphasized, especial care must be exercised in just this type of individual—fixation should be continued over a longer period than the average, with avoidance of atrophy by muscle education and gradual weight bearing. Nine have stood the test of time, though a much larger group, and a more extensive period, will be necessary before final conclusions, as to the durability of the reconstructed knees, can be reached. All these knees are strong, stable and serviceable, though probably not capable of the same physical endurance as the normal knee joint. In three, two years have elapsed; in four, three years; in one, five years, and in one, six years. The tendency has been to improve in strength and efficiency, reaching the maximum by the latter part of the second year. Those with from 50 to 70 degrees of motion are the most satisfactory. Full motion is usually attained at the expense of stability. The chances of success in arthroplasty of the knee, as ascertained in the management of fifty-nine cases, is conservatively 75 per cent. The remaining 25 per cent. will either be benefited by an improved position, or remain in the same condition as prior to the operation should any bony fusion recur. Flail joints will not occur, if one remains within the bonds of reason in operating, and the subsequent after-treatment is assiduously followed.

For the sake of brevity, the description of the after-treatment will be condensed. In the jaw, a wedge is kept between the teeth for several weeks, to be removed only for cleansing and active motion, which is begun on the first day. In the knee, hip and elbow, motion is instituted on the tenth day, by the aid of a simple sling and pulley apparatus attached to an overhead bar or Balkan frame. Active movements are encouraged as early as possible. In the knee, partial weight bearing is

Fig. 5.—Six years after arthroplasty of the knee: 50 degrees flexion and complete extension; from 50 to 70 degrees motion gives the most satisfactory joint.

permitted in from four to six weeks; in the hip joint, in three weeks. This is gradually increased as determined by functional development—in the average arthroplasty of the hip and knee, there may be full weight bearing in from ten to twelve weeks. In large, fat persons, and in those with marked muscular atrophy, fixation should be prolonged for three or four weeks. By the aid of crutches, the Thomas caliper and Brad-

ford abduction hip splints, the increase of weight bearing may be graduated. The amount of weight permitted is controlled by the condition of the bone, as shown in the roentgenograms. All mottling of articular extremities or other evidence of osteoporosis must disappear with restoration of normal trochleae before weight, without apparatus, should be permitted; otherwise, there will be compression of the atrophic, spongy bone, with irregularity in contour and instability. Brisement forcé is rarely required, and must be cautiously employed. Under no circumstances should the range of motion be increased over 20 degrees, or the reaction will be so great that progress will be retarded. Physiotherapy, intelligently administered, is a valuable adjunct. When feasible, preliminary treatment is advisable; in those with a true muscular atrophy, however, muscle training may be instituted on the tenth day with favorable results if combined with the foregoing measures.

From personal experience, I regard the percentage of success in well selected cases, in the four favorable joints, as follows: temporomaxillary, 90 per cent; elbow, 90 per cent; hip (single), 60 per cent., and knee, 75 per cent.

It is quite true, as has been stated, that special technic in operation and in after-treatment is essential to success. This has been acquired through many failures and bitter disappointments, as very little of practical value could be ascertained from the experience of others. There is, however, no reason why any surgeon, well trained in bone and joint surgery, should not acquire the same results if the simplified methods, mentioned above, are closely followed.

CONCLUSIONS

1. There is a vast difference between arthroplasty and excision. The former is the reconstruction of a joint; the latter, the induction of pseudarthrosis.

2. Our efforts should be directed toward reproducing function and not mere anatomic detail, thus simplifying and standardizing operative technic.

3. Fear of removal of too much bone is unwarranted, if one remains within the bounds of reason. Instable joints are the results of atrophy, and not excision of bone.

4. The roentgenograms, taken after several months, show extensive reactive proliferation about the margins of the articular surfaces, but not a true arthritis. Analogous conditions are found in apparently normal joints, as a result of trauma or infection.

5. The after-treatment must be intelligently carried out, especially with reference to osteoporosis or atrophic bone changes, which can be avoided by intensive physiotherapy and gradual weight bearing, restricted by special apparatus.

869 Madison Avenue.

ABSTRACT OF DISCUSSION

DR. M. S. HENDERSON, Rochester, Minn.: Dr. Campbell has presented the largest series of cases that I have heard of. I have visited Dr. Campbell and have seen his results, and they are even better than he asserts in his paper. The important point of Dr. Campbell's work is that he has come to disregard, more or less, the anatomic structure of the individual joint. For example, in the knee-joint cases, he does not try to make two weight-bearing surfaces, the internal and external condyles; he makes one. When he first told me about this, I was rather doubtful about its value, but on seeing and examining some of his reconstructed knees, I can only say that it works beautifully. When one obtains in a knee-joint a flexion voluntarily to right angle, the stability will not be as good as though one obtained only 70 degrees of flexion. Therefore, I agree with Dr. Campbell that the reconstructed knee that gives only 70 degrees flexion is a better knee than that in which a right angle flexion is obtained. Some joints are found slow to respond after arthroplasty. There may be several reasons for this. There may be adhesions; and sometimes by anesthetizing the patient completely and putting the joint through flexion and extension, gently, once or twice, not traumatizing by needlessly pumping back and forth, one breaks up the adhesions so that the joint will respond more quickly to the active efforts of the patient. The patient must have the grit and determination to put up with some pain. Dr. Campbell mentioned the use of fascia lata from the patient's thigh. There has been a controversy going on for years as to whether an autogenous free flap or some membrane like the Baer's membrane or the Allison's membrane should be used. Good results have been obtained when these artificial membranes have been used, but the autogenous fascia lata so easily obtained is, I believe, the logical thing to use. In some joints, it is not necessary to put in any interposing tissue, especially in the jaw. Dr. Campbell is using the same method that we have followed in our jaw cases, namely, merely removing the articulating process of the condyles and putting nothing in, and excellent results have followed. Step by step, advance is being made in mobilizing ankylosed joints. It is by such work as Dr. Campbell has presented that advance is being made.

DR. EDWIN W. RYERSON, Chicago: This is one of the most interesting subjects in the entire field of surgery, and it is one of the last to be developed. Dr. Campbell's paper throws a great deal of light on the results that we may anticipate. Up to very recently, arthroplasty was an almost unsolved field. Murphy primarily stimulated our interest. Some of his cases were extremely good, and we now have certain standardized laws and ideas, about as follows: Practically all cases of jaw ankylosis can be relieved; practically all the elbows that have not been complicated by too great destruction of muscles and skin around the joint can be made into good, useful elbows. The knee, I am very pessimistic about. I have performed in all about seventy-five arthroplasties, about fifteen of which were of the knee. Only three of these knees are really good; most of the others are bad. In analyzing these cases, one fact primarily strikes me, that women and men with large, fat legs are not good subjects for knee arthroplasties. I have had three cases of pure fat necrosis without infection which later ankylosed. The hip joint cases are not as bad as the knee cases. The prognosis is much more favorable, provided one takes out plenty of the head of the femur and bores a good big acetabulum. The large round ball of the head should be narrowed down until only a tapering of the neck is left, and the acetabulum should be bored out with a Murphy or Lexer burr. In hip tuberculosis cases, it is striking to see what good function there is with a little head and a large acetabulum. Recently, in arthroplasties I have been cutting down the head of the femur to a small size. Dr. Campbell spoke of pronation and supination in the elbow cases. That should be attended to. When there is a synosteosis of the radius and ulna, the head of the radius should be removed and a little flap placed between it and the ulna, so that the very useful motions of supination and pronation can be obtained. Another way to obtain that is to excise half an inch of the shaft of the ulna near the wrist, so that a false joint can be made there. It is striking to see what a useful hand can be made by making a false joint in the ulna. It is not wise to do it in the radius.

DR. KELLOGG SPEED, Chicago: I want to call your attention to the fact that one may acquire mobility in a joint and yet lose stability. When the joint concerned is one that bears weight, we must maintain stability, and if in the knee we get a fine degree of flexion and lose stability so that the knee wabbles, we lose the beneficial effect of the operation. Stability can be obtained by being very careful as to the amount of the fibrous capsule that is destroyed or dissected away. The conservation of the fibrous capsule is an important point in the operation. I have been very unfortunate in my arthroplasties on the elbow in children, and I believe that part of

the bad result is caused by the fact that the children will not move the joint after the operation. They are willing to move the shoulder and the scapula, but they will not attempt to move the elbow joint, even though pain is not present, so that, in my experience, the final results in children are rather poor. In fractures of the head of the radius or synosteosis of the ulna to the radius or humerus, removal of the whole head down to the neck, almost to the biceps insertion, is indicated, and over that bare surface of the bone a small flap of fascia will lead to the formation of a very useful joint with restoration of pronation and supination. The results in those cases are startlingly good, and even in children the elbow joint becomes completely movable.

DR. C. H. MAGEE, Burlington, Iowa: I should like to know how a false joint in the ulna can permit pronation and supination.

DR. WILLIS C. CAMPBELL, Memphis, Tenn.: Pronation and supination, rotation of the radius, would not be secured in the elbow unless an arthroplasty is employed between the radius and the ulna. However, if free motion in flexion and extension of the elbow is obtained, rotation of the shoulder compensates to a large extent. As Dr. Ryerson states, a small neck and head of the femur in a large acetabulum would insure motion, but not stability; consequently, I could not advise such a procedure. A stiff joint is far better than one that is unstable. The reconstruction of an ankylosed joint is not alone a question of motion, but also of stability and durability. Arthroplasties are not, as a rule, satisfactory in children.

CHRONIC GALLBLADDER DISEASE IN THE YOUNG ADULT*

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AND
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The basis for this paper is a series of fifty-seven cases of chronic gallbladder disease in young adults, operated on in the early stages of the disease, with no

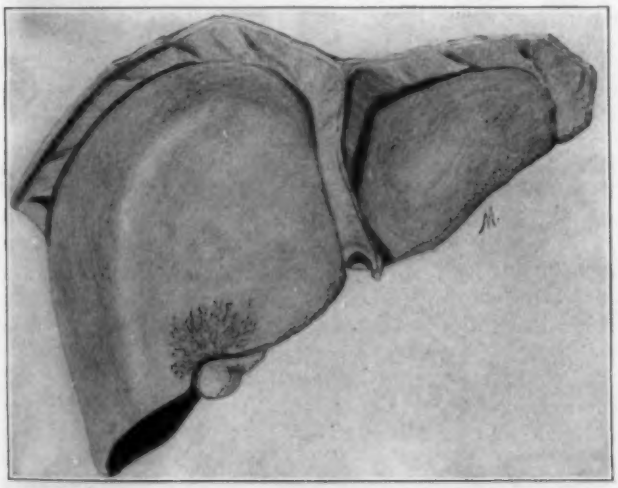

Fig. 1.—Streaks of connective tissue in the liver, radiating fanlike, from the gallbladder region. (The drawing is too distinct.)

mortality. All of these patients have improved, and most of them have lost their symptoms. We have been particularly interested in the early manifestations of chronic cholecystitis. We have come to feel that, before our study of the series from which these cases were selected and before our study of the pathologic findings in these cases, we commonly missed the diagnosis of a surgical condition of the gallbladder until the patient was in the late stages of gallbladder disease. We find that, as our cases have multiplied, we have been making the diagnosis of chronic cholecystitis earlier, and with increasing confidence.

These fifty-seven cases were selected after a restudy of a larger series of obscure cases presenting persistent

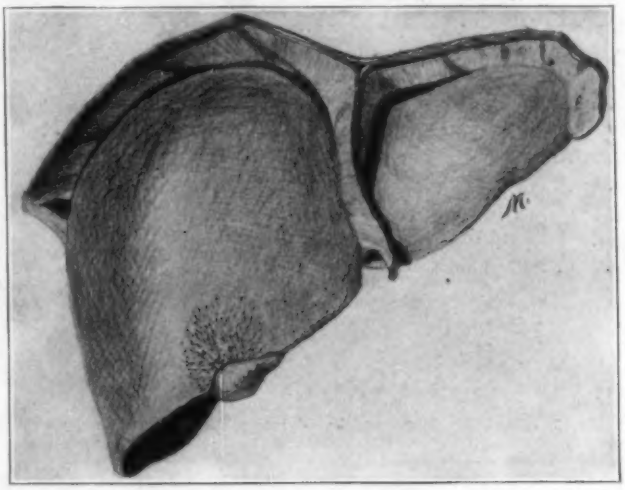

Fig. 2.—Well marked, fanlike streaks of connective tissue in the liver, radiating some distance from the gallbladder region. (The drawing is too distinct.)

abdominal symptoms, all of which had been gone over carefully before. Many of them had been studied more than once by different groups of men. Some of the patients had been seen previously by one or both of us. None of them had had a previous, definite diagnosis of cholecystitis. Many of the cases had been recorded with "diagnosis undetermined"; some with "probable ulcer of the duodenum," "possible ulcer of the stomach or duodenum," "possible abdominal adhesions," or "possible chronic appendicitis." In some cases there had been a definite diagnosis of "ulcer of the duodenum" and the patient had been hospitalized and given the full course of treatment, with temporary relief or without relief; some of them had been given the treatment more than once.

We made a thorough restudy of the whole series of cases, obtained the old records, and made new histories or added to the old ones. All the patients were given the opaque meal and a fluoroscopic examination. All were given the test meal and a careful physical examination. Our first endeavor was to establish the fact that these patients must have some abdominal lesion to account for their condition, even though it was obscure. From the clinical point of view, we have used a summarizing chart, which includes the following points:

Age, 24 to 46, in the following five-year periods: 24 to 30, thirty-three cases; 31 to 35, nineteen cases; 36 to 40, two cases; 41 to 45, two cases; forty-six, one case. Fifty-two patients, more than 90 per cent., were under 35 years of age.

Previous abdominal operations: appendectomy, twenty-four cases; gallbladder explored, two cases; cholecystectomy, two cases; gastro-enterostomy, two cases; excision of duodenal ulcer, one case.

Previous diseases: typhoid, eight cases; influenza, eighteen cases; scarlet fever, six cases; smallpox, six cases; measles, twenty cases; no previous diseases except, possibly, tonsillitis and "colds," fifteen cases.

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

It was practically impossible to trace the direct infection that may have caused the original gallbladder disease in these patients, but we feel strongly that the infections of the earlier years are, probably, the causal factors in the trouble.

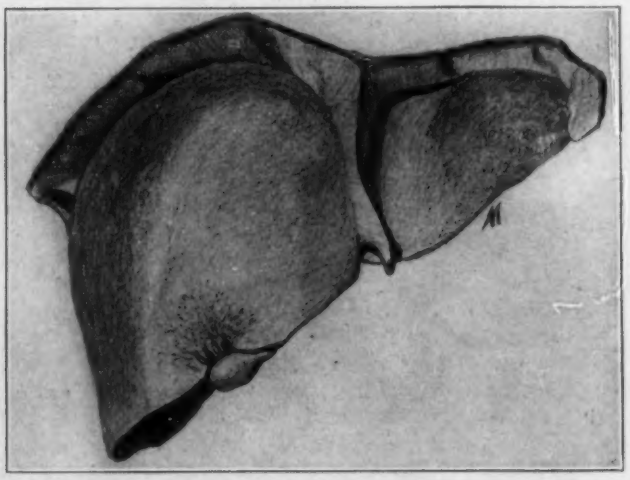

Fig. 3.—Marked, fanlike streaks of connective tissue, with grooves of contracted connective tissue just beyond the liver margin which enclose spindle-shaped masses of the liver. (The drawing is too distinct.)

The type of pain: twenty-three cases, described as dull ache; ten as sharp, severe; eight as dull, with sharp attacks; five as burning; four as crampy; three as severe, gnawing, and two as a distress: nine patients noted radiation to the back, under the scapula; forty-eight patients noted no radiation.

Relief from pain: eleven cases by food only; four cases by bowel movement; two cases by vomiting; one case by ice water; four cases by soda; three cases by empty stomach; one case by food and soda; one case by belching; thirty cases not relieved by ordinary measures.

When the dietary items considered most distressing by these patients are reviewed, the outstanding things are greasy and fried foods, fats, raw vegetables, raw

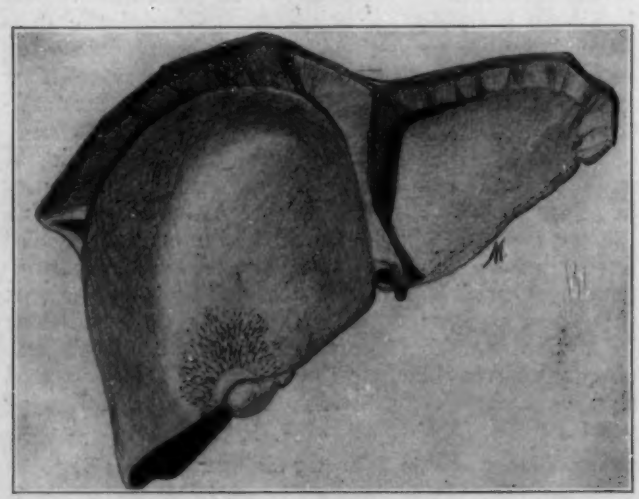

Fig. 4.—Marked fans with a good-sized half-moon of the liver margin near the gallbladder, flattened into a grayish mass of connective tissue, which looks like wet leather. (The drawing of the fan is too distinct.)

fruits, acids, pastry, heavy sweets and meat. Five patients gave a history of jaundice, but only one ever noticed clay-colored stools. Nineteen had vomited either occasionally or frequently. The bowel history showed that thirty-one patients were regular, twelve constipated, nine irregular, and that two had diarrheal attacks and one chronic diarrhea.

In regard to the physical examinations of these patients there is only one procedure worthy of comment, and we have found it to be of unfailing value. That is the palpation of a definite point of tenderness in the gallbladder region. We have found it practically useless to carry out the usual method of palpation, with the patient on his back. In this position, the abdominal organs float toward the diaphragm, bringing the duodenum and gallbladder into approximation, and permitting the liver to recede under the costal margins. We have found that the only satisfactory and definite way of palpating the gallbladder for tenderness is with the patient sitting sideways on the table, bent loosely forward with the arms hanging free, and with the examiner behind the patient on the other side of the table, bringing his hands around over the relaxed abdomen. This not only throws the liver down to a position more easily palpated, but a much better controlled pressure can be exerted.

A fractional gastric analysis was made on all these patients. The results were nearly all within normal limits. Very little information was gained except on

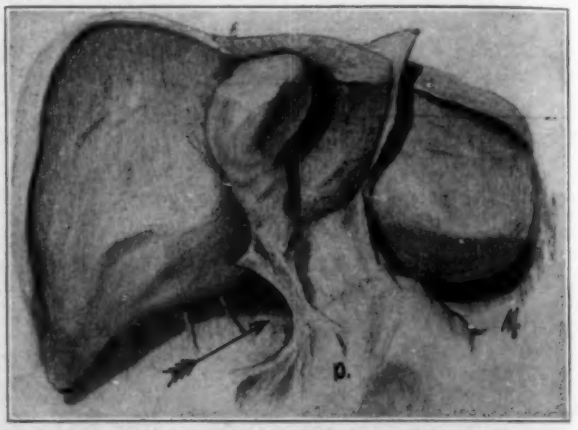

Fig. 5.—Connective tissue markings much more distinct in the upper surface of the liver than in the lower. (The drawing is too distinct.)

one point. When the hydrochloric acid readings approached the ulcer class, the fifteen-minute readings gave a hydrochloric acid curve which rose to its maximum and then gradually sank to a fairly low level before the next meal; whereas, in a true ulcer case, when the curve reaches its maximum, it commonly continues fairly high until the next meal, when it falls rapidly.

A complete gastro-intestinal roentgen-ray study was made on all the patients and, in the main, the benefit obtained was negative in that it merely assisted in ruling out gastric and duodenal lesions. We found irregular duodenal caps in several cases, considered to have been produced by old healed ulcers or by adhesions to the gallbladder; proof was obtained at operation.

One can see, by the tabulation of the histories of these patients, that there were no outstanding points on which to base a diagnosis, except on (1) definite tenderness of the gallbladder, often mild in degree and elicited in a special manner, and (2) a history of persistent symptoms of chronic digestive disturbances, which constituted a real disability, associated with pain or with abdominal distress. These were the two outstanding points on which we based the diagnosis. All

these cases presented both of these diagnostic factors. None of the patients had had a previously correct diagnosis, unless it was the two who had been operated on, with exploration of the gallbladder, in whom the abdomen had been closed with the record that the gallbladder seemed normal, and the two in whom the gallbladder had been drained without permanent relief of the symptoms.

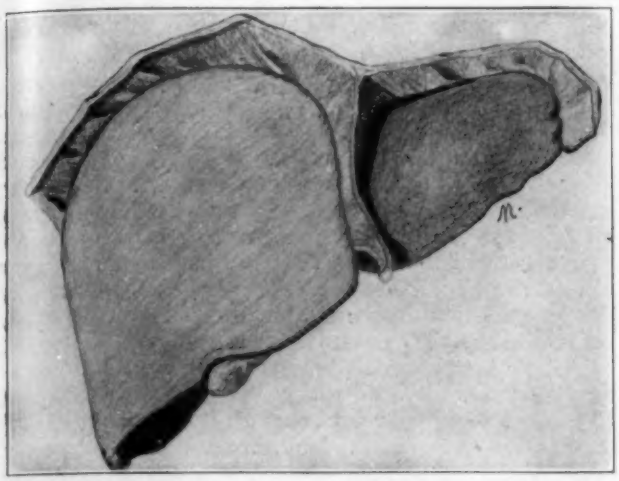

Fig. 6.—A well marked sheet of connective tissue practically all over the upper surface of the right lobe of the liver; this is thought to be due to a previous peritonitis, not especially connected with the gallbladder trouble, but showing its main effects where the liver lay close to the diaphragm. These livers were not adherent, except sometimes at points along the liver margin.

It is often the very indefiniteness and the chronicity of the symptoms which convinces one of the true nature of the complaint, after everything else possible has been ruled out. We have become so accustomed to these indefinite histories of persistent or recurring abdominal pain or distress of many types, some simulating ulcer and other various types of indigestion, vomiting, chronic diarrhea or chronic constipation, that we feel that a very small degree of error is necessary in the diagnosis of this condition. In this series of fifty-seven cases the preoperative diagnoses made by one of us (H. S. W.) were (1) positive chronic cholecystitis, (2) probable chronic cholecystitis, (3) a condition justifying exploration; by the other (A. T. M.), it was given in percentages. For instance, in one case it might be that 85 per cent. of the symptoms were produced by the gallbladder, and 15 per cent. by an ulcer; in another, 65 per cent. of the trouble might be traced to the gallbladder and 35 per cent. to the appendix; in another, 50 per cent. might be traced to the gallbladder, 25 per cent. to the appendix, and 25 per cent. to adhesions. In no case in which the percentage of gallbladder trouble was placed at 50 per cent. or more did we fail to find chronic cholecystitis. The same was true of these cases classed as "positive" or "probable." The preoperative diagnosis was always given by both of us, and, although the correctness of the diagnosis was at first a constant surprise to us, we soon came to rely very definitely on our findings.

When we came to the findings at operation, we found them interesting and constant. The variations were mainly in the degree of the changes that had taken place. All the gallbladders showed change, and the livers all showed local, chronic, inflammatory hepatitis radiating from the gallbladder area. Three of the gallbladders looked normal to the eye; two of them had been left in place as "normal" at previous exploratory operations; all of them showed under the microscope chronic connective tissue changes. About 25 per cent. of the livers looked normal. The remainder showed different grades of changes, such as (1) faint markings of yellowish gray near the gallbladder margin; (2) faint, irregular streaks of the same gray, radiating, fanlike, from the gallbladder margin (Fig. 1); (3) well marked streaks radiating for some distance (Fig. 2); (4) marked, fanlike areas with grooves of contracted connective tissue just beyond the liver margin, which enclosed spindle-shaped masses of the liver (Fig. 3), and, finally, (5) marked fans, with a good-sized half moon of the liver margin near the gallbladder flattened into a grayish mass of connective tissue, which looked like wet leather (Fig. 4). All the organs in these cases, which looked normal to the eye, showed the same connective changes in earlier stages under the microscope. The upper surface of the liver always showed more changes than the lower, and often, when there were well marked streaks of gray in the upper surface, the changes on the lower surface could be seen only under the microscope (Fig. 5). The connective tissue between the gallbladder and the liver was often more dense than normal (Fig. 6).

We feel that these studies are a clinical demonstration of the associated inflammation of the gallbladder and the liver, by way of the lymphatics. In every case both the gallbladder and the liver showed changes of the chronic inflammatory type. In the gallbladder, the deeper layers showed more changes than the mucous membranes. In the liver, the changes were in the connective tissue of the perilobular spaces, with subsequent atrophy of the enclosed lobules. It seems to us, also, that the whole series of cases supports the infectious origin of chronic cholecystitis.

There are only a few points in technic that need be mentioned. We prefer the removal of the gallbladder from below, upwards (Figs. 7 and 8). This can be done safely, as a rule, if the bulging, cystic end of the gallbladder is caught with forceps and pulled upward,

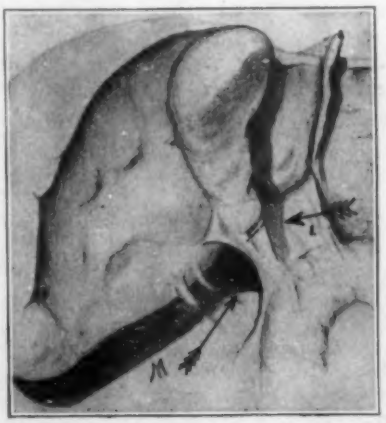

Fig. 7.—The fold of peritoneum that stretches downward from the bulging cystic end of the gallbladder (to be cut at the dotted line).

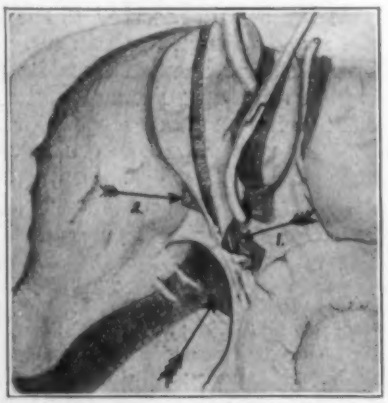

Fig. 8.—Operative procedures: (1) the line of incision of the peritoneal covering of the gallbladder; (2) the point for beginning the separation of the gallbladder from the liver in order to free the cystic duct without injury to the right hepatic duct, which sometimes is included in its sheath, and (3) the peritoneum cut at the dotted line (Fig. 7).

so that it may be separated from its liver bed, distinctly above the origin of the cystic duct, and so above any point at which the right hepatic duct may be caught and injured. It is of definite advantage, before this is stripped downward to the duct, to cut the thin fold of peritoneum running downward from the bulging end of the gallbladder, thus exposing the upper surface of the cystic duct and, often, the cystic artery (Figs. 9 and 10).

All of the series (fifty-seven patients) were treated with double ligation of the cystic duct and with primary closure of the abdomen, without any mortality resulting. We hold no brief, however, for the primary closure of the abdomen, and it is our custom to use some simple form of drainage in most of the ordinary types of gallbladder cases.

CONCLUSIONS

1. The diagnosis of chronic cholecystitis can be made earlier than it is made, as a rule.

2. Chronic cholecystitis was associated with chronic, localized changes in the liver, radiating from the gallbladder region in all of the series of cases.

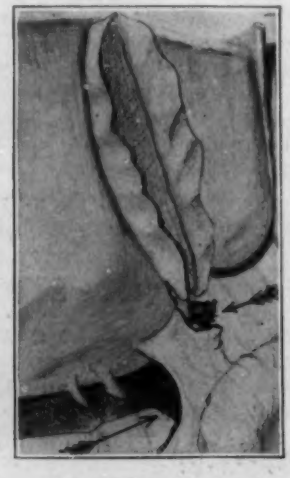

Fig. 9.—The cystic duct and artery tied, and the gallbladder removed.

Fig. 10.—The completed suture, with the raw surfaces covered, but with the cystic stump freely presenting.

3. Colic, pain referred to the shoulder, and jaundice are usually absent in these early cases.

4. The fractional test meal and the fluoroscopic examination are of no practical value, except in the ruling out of other lesions.

5. Primary closure of the abdomen, without drainage, may be done in all of these early cases, but it is not strongly advocated.

Fresh Beef and Milk Diet in Pellagra.—Eight well marked, though not very severe (mainly dermal), cases of pellagra were treated by Joseph Goldberger and W. F. Tanner (*Pub. Health Rep.* **39**:87 [Jan. 18] 1924) with fresh beef as the only known therapeutic element in the diet. In all eight cases clinical improvement followed the inauguration of the beef treatment. In four of these cases the treatment with beef followed an unsuccessful period of treatment with gelatin, the contrast in results tending to emphasize, on the one hand, the inadequacy of gelatin, and, on the other, the therapeutic potency of fresh beef. The preventive value of milk was tested by daily supplementing the basic diet of a group of twenty-nine inmates of the Georgia State Sanitarium with approximately 40 fluidounces (1,200 c.c.) of buttermilk. None of these patients developed any evidence of pellagra at any time during the period of observation. Fresh meat and milk contain the essential pellagra-preventive factor or factors.

TUMORS OF THE PANCREAS

OPERATIONS PERFORMED ON TWELVE PATIENTS *

JOHN J. GILBRIDE, M.D.
PHILADELPHIA

Malignant disease of the pancreas is, in most cases, treated by a palliative operation. A radical operation is rarely possible because the disease is usually advanced, and there is involvement of the surrounding structures. Some tumors of the tail and of the body of the pancreas have been excised or resected. In one of the patients whose case is reported in this paper, I removed two tumor masses of sarcoma from the head of the pancreas. Excision of the head of the pancreas is a formidable type of surgery, and complete extirpation of this organ is followed by the death of the patient. Carcinoma of the pancreas is more common than we formerly believed. Sarcoma is very rare.

The problems associated with surgery of tumors of the pancreas are (1) diagnostic, (2) anatomic and (3) physiologic. Radical surgery in connection with the pancreas is always difficult because of the anatomic relationship of the pancreas to the large blood vessels and other important structures, all of which exist under normal conditions. Then there are the added difficulties presented by advanced disease because of our inability to make an early diagnosis in those cases. In a very few cases, the pancreas is not firmly fixed to the posterior abdominal wall, and it is therefore much more accessible for operation. The tail of the pancreas is frequently movable, and in a very small percentage of cases the entire gland is slightly movable.

The importance of the physiologic significance of the pancreas is well understood, in that this is one of the vital organs of the body. It has two definite and distinct functions, i. e., an internal function, that of sending a secretion into the blood, and an external function, that of sending a secretion into the duodenum. It is not definitely known just how much pancreatic tissue must be left in the body in order to provide for the internal secretion of this gland. If we are to judge by our clinical experience, it is not necessary to leave a large part of the gland, because glycosuria is only rarely present in cases of tumor of the pancreas. I have observed an absence of glycosuria, even when the entire pancreas appeared to the naked eye to be cancerous. This suggests that either the islands of Langerhans escape cancerous invasion, or the few remaining islands seem to be capable of caring for carbohydrate metabolism. Likewise, the question as to whether the preservation of the external secretion of the pancreas into the intestine is absolutely essential to health has not been settled. We no longer have to depend on an examination of the feces in order to determine the absence or presence of the pancreatic secretion into the intestines. This can be determined by the use of the duodenal tube.

The symptoms of malignant disease of the pancreas are indigestion, weakness, loss of weight, jaundice and pain; less frequently, there is ascites, edema, etc. Practically all cases of cancer of the pancreas give a history of vague, indefinite attacks of indigestion. Weakness is frequently pronounced and of such a character that the patient is compelled to go to bed. There is a gradual loss of weight, which may be 20 or 30 pounds (from 9 to 13.6 kg.) or more. Jaundice is the most common

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

and the most important sign of cancer of the head of the pancreas. It is of the obstructive type, gradually becoming deeper, and in some cases the patient's skin is dark green or nearly black. The patients whom I have seen have not complained of the itching that has

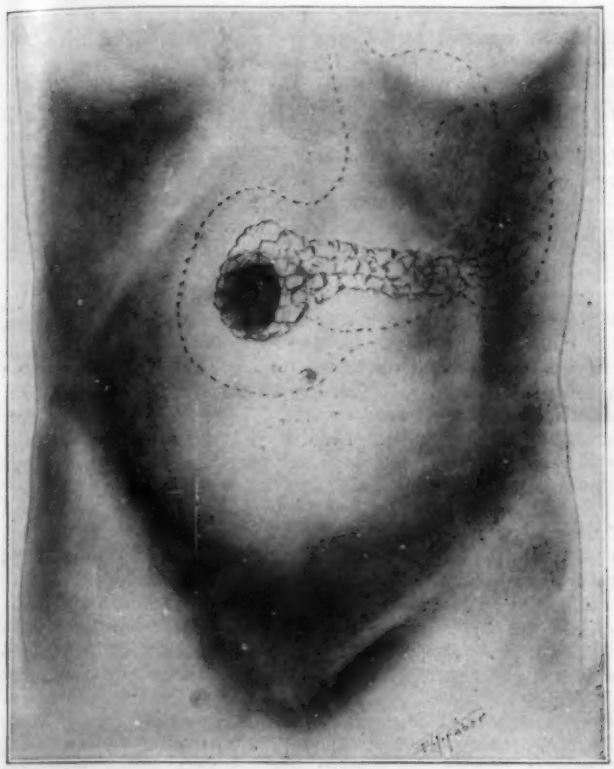

Fig. 1.—Carcinoma of head of pancreas.

been generally described as associated with this disease. This led me to think that there might be a difference between jaundice due to malignant disease and the same conditions due to nonmalignant disease, or that the absence of itching could be explained by the absence of infection.[1]

Pain is not common in cancer of the pancreas. The pancreas has no capsule, and pain in this organ is caused by pressure on or the involvement of surrounding nerves and plexuses of nerves. Pain, when it is present, is frequently referred to the back; or, in cancer of the body or the tail of the pancreas, it may be referred to the angle of the left scapula. In some cases of extensive disease of the pancreas, pain is absent. The case of cancer of the body and tail of the pancreas reported in this paper was not accompanied by pain. The patient with sarcoma of the pancreas had pain only when she was lying down. A moderate amount of fluid is quite frequently found in the peritoneal cavity in these patients. It was present in three of my cases. In two cases it was moderate in amount; in the patient with cancer of the body and tail of the pancreas, there were 14 liters of a chylous fluid, which was the result of pressure on and involvement of the radicles forming the thoracic duct.

My experience with tumors of the pancreas has been limited to twelve cases. Of these, eleven were cases of carcinoma and one was a case of sarcoma. Ten of the carcinoma cases were primary in the pancreas. One was secondary to cancer of the rectum. The ordinary case of cancer of the head of the pancreas does not present anything of unusual interest. I will report three cases and briefly refer to the fourth case. In the first case there was cancer of the head of the pancreas, in which I had to change the operative procedure. In the second case there was cancer of the body and tail of the pancreas, with metastasis to the spleen. In the third case there were two tumor masses of sarcoma of the head of the pancreas, removed at operation. The patient lived one year and thirteen days after the operation. In the fourth case, cancer of the pancreas was secondary to cancer of the rectum. The latter condition was discovered after I had operated for the pancreatic disease under a diagnosis of chronic pancreatitis.

REPORT OF CASES

CASE 1.—A woman, aged 42, white, unmarried, born in the United States, was referred to me by the late Dr. Joseph O'Malley. The patient had a chronic jaundice of three months' duration. Indigestion had been present off and on for one year, and she complained of fulness and distress after eating, loss of appetite, and weakness, which had confined her to bed for one month. She had had several attacks of colicky pain in the right upper abdomen, and the bowels were constipated. There had been a loss of 20 pounds (9 kg.).

The patient was a woman of medium size and build, with fair nutrition. The skin was deeply jaundiced and unusually dark, and the sclera was deep green. There was an absence of scratch marks on the body, and the patient did not complain

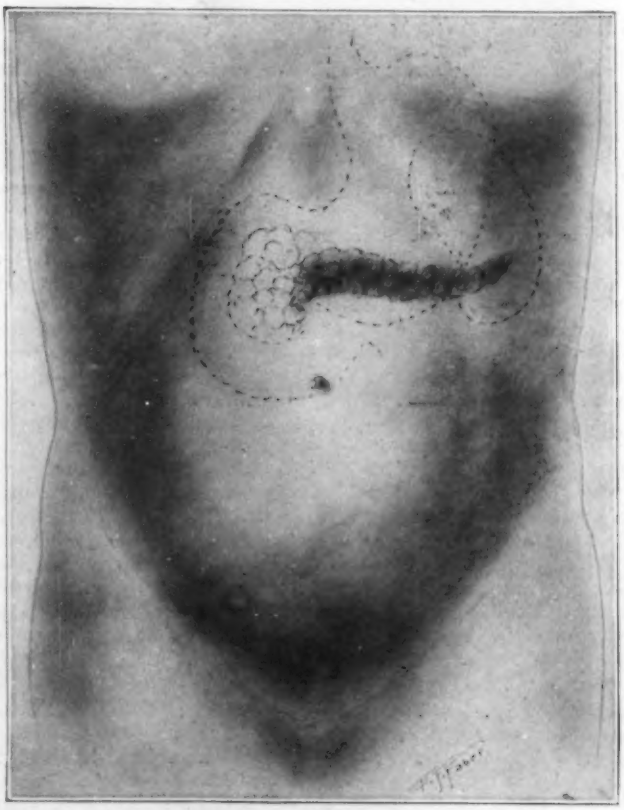

Fig. 2.—Carcinoma of body and tail of pancreas.

of any itching of the skin. The tongue was coated; the neck, lungs and heart were normal. The abdomen was convex, well formed, and with good musculature. No abnormal prominence was distinguished, and peristaltic waves were nowhere visible. The outline of the stomach appeared to be normal. The liver was not increased in size. Careful inspection of the abdomen showed a shadow present, on inspiration,

1. Gilbride, J. J., in discussion on Lockwood, C. D.: Tumors of the Pancreas, J. A. M. A. 77: 1554 (Nov. 12) 1921.

in the region of the gallbladder. Palpation of the abdomen revealed the presence of a mass in the epigastrium, to the right of the median line just above the umbilicus (Fig. 1). The mass was hard, irregular in outline, oval, about 6 cm., vertically, by 3 cm., and it could be moved slightly in different directions. I made a diagnosis of cancer of the head of the pancreas.

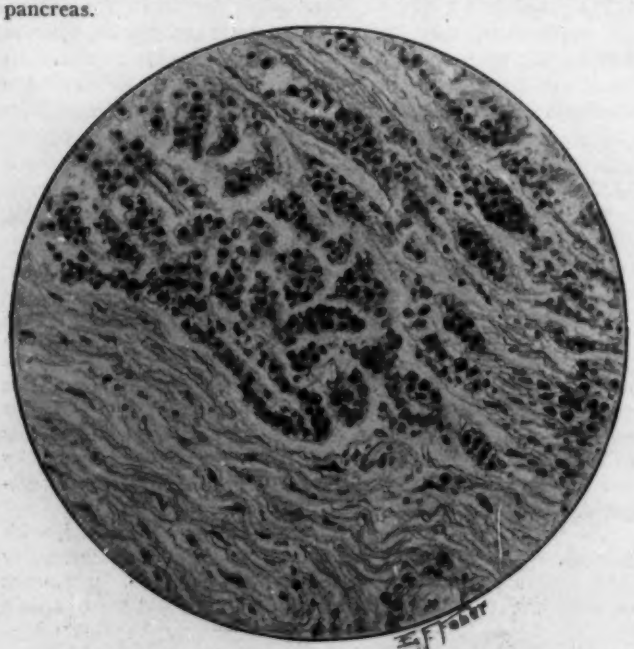

Fig. 3 (Case 2).—Cancer of pancreas.

The laboratory examination revealed: hemoglobin, 70 per cent.; erythrocytes, 3,200,000; leukocytes, 5,500. The urine contained bile, but it was otherwise normal. The stools were large, bulky, greasy, and of light color. The gastric contents examined after an Ewald test breakfast showed a total acidity of 32; free hydrochloric acid, 6, and no gastric retention.

The operation was performed at St. Agnes Hospital. An incision was made through the upper part of the right rectus muscle and the peritoneal cavity opened. The gallbladder was distended but normal in color. The gastrocolic omentum was torn through, and the mass was exposed in the head of the pancreas. I made an attempt to unite the gallbladder with the duodenum, but the latter, whose walls are usually as tough as parchment, was so soft that the sutures pulled out. That procedure had to be abandoned, the wound in the duodenum closed and a cholecystostomy performed. Following the operation, the patient was very weak, vomiting persistently, took very little nourishment and died five days later. I performed a necropsy the following day. Drainage was good, and there had been no leakage. The wound in the duodenum was tightly closed. There was no apparent metastasis. I removed the head of the pancreas with the duodenum and took the specimen to the Medico-Chirurgical College Laboratory, where it was examined by Dr. Lengle, who reported that it was a case of cancer of the pancreas.

CASE 2.—Mrs. S., aged 57, born in the United States, a patient of Dr. Franklin Grove Bigoney of Lansdale, Pa., was confined to her bed for three weeks because of weakness and a great increase in the size of the abdomen. The abdominal enlargement began two months before I saw her at her home, Nov. 7, 1921. I had the patient removed to St. Mary's Hospital on the following day. There had been intermittent attacks of indigestion extending over a period of three years. These attacks lasted for three or four days, and recurred about once every four or five months. During the attacks there were fulness and distress, belching, sour eructations, and attacks of pain in the epigastrium. The pain, which occurred about one hour after eating, was relieved by the taking of sodium bicarbonate. There had been intermittent swelling of the feet for the last three years. The appetite was poor. There was no vomiting, and the bowels were constipated. There had been a loss in weight of 30 pounds (13.6 kg.) within the last year. Jaundice had not been present at any time.

The patient was of medium size, pale, and poorly nourished. She did not have the appearance of cachexia or emaciation. The eyes, face and neck were normal, as were also the lungs and heart. The arms and legs were not swollen. The abdomen was enormously increased in size, and the skin over the abdomen was not glossy, nor were the superficial abdominal veins prominent. The outline of the abdomen was convex and regular; no masses were visible or could be felt on palpation. The abdomen was flat everywhere to percussion except over a small area in the region of the umbilicus, which was tympanitic. The abdomen was filled with fluid. The liver could not be outlined.

The gastric contents examined after an Ewald test breakfast showed a total acidity of 20; free hydrochloric acid was absent. Lactic acid and the bacilli of Oppler and Boas were absent. The test for occult blood was negative.

According to the laboratory examinations made by Dr. William Rees, pathologist at St. Mary's Hospital, November 9, the urine, which was acid, amber and clear, had a specific gravity of 1.020 and contained no albumin, glucose or casts; a few leukocytes and a few erythrocytes were present. The blood test revealed: erythrocytes, 3,050,000; leukocytes, 7,800; hemoglobin, 75 per cent. The differential blood count showed: polymorphonuclear leukocytes, 80; large lymphocytes, 5; small lymphocytes, 15; eosinophils, 0. The feces were normal.

A trocar and cannula were introduced into the abdominal cavity below the umbilicus, and 14 liters of chylous fluid was withdrawn. The ascitic fluid was milky in appearance, and on standing showed the presence of a considerable amount of blood at the bottom. Dr. Rees reported that the fluid had a specific gravity of 1.010, and that it was negative for glucose and bacteria. The patient was too weak for further examination at this time. The next day I made another examination of the patient's abdomen, and, although the fluid had largely reaccumulated, on deep palpation I thought that I could detect a transverse mass (Fig. 2) with a sharp border extending from the left of the median line above the umbilicus over

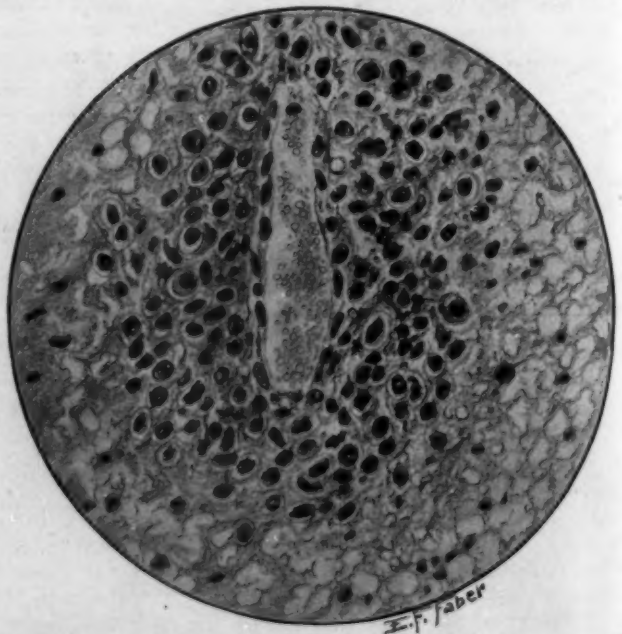

Fig. 4 (Case 2).—Metastasis to spleen, resulting from carcinoma of body and tail of pancreas.

into the left hypochondrium (Fig. 2). My opinion was that the mass was the tail of the pancreas and that it was the seat of malignancy.

A roentgen-ray examination was made, November 11, by Dr. William H. Schmidt, roentgenologist at St. Mary's Hospital, with the following observations: The lungs showed infiltration of the hilum on both sides, with several areas of

density in the parenchyma; the esophagus was normal. The stomach filled in the upper part first and the barium gradually ran into the lower part through a small opening. This, however, gradually filled out and disappeared. The duodenal cap filled only after manipulation, and it was apparently normal. The stomach was high up in the abdomen and occupied a transverse position. Peristalsis was sluggish, but there were no filling defects, and there was no gastric residue after six hours. The colon was filled with a barium enema, and showed a normal filling. The hepatic and splenic flexures and the transverse colon occupied normal positions. No filling defects were seen in the colon. A twenty-four plate showed the colon to be still filled. No pathologic condition of the gastro-intestinal tract was evident. The tumor palpated must have originated outside the gastro-intestinal tract.

Under gas and oxygen anesthesia, an exploratory operation was performed, November 13. A small buttonhole incision was made at the outer border of the left rectus muscle above the umbilicus, and a large amount of fluid escaped. The pancreas was readily palpated by the index finger of the left hand, and the diagnosis was confirmed. The patient progressed nicely, and appeared to be doing well, when she died suddenly, November 15. A necropsy was performed the next day by Dr. Harry Shay, resident physician at St. Mary's. Dr. Shay removed the pancreas and the spleen. He stated that the liver and other organs were free from cancerous involvement. The cancer mass involved all of the body and tail of the pancreas, which was very hard and nodular, composing a mass 13 cm. long and 6 cm. wide. The spleen was about twice its normal size; its surface was irregular, and the capsule was adherent. On the cut surface of the spleen there were three nodular areas of cancer involvement. The lymphatics around the body and tail of the pancreas and in contact with the hilum of the spleen were the seat of cancer.

Histologic examination by Dr. Allen J. Smith revealed that the involved portion of the pancreas showed extensive destruction of tissue, with dense cicatrization enclosing areas of small lymphoid cells. In places, these cells formed a ramifying net. The cells were not all true lymphocytes, but some were epithelial or epitheloid, and were similar to those in chords, which extended from elongated acini of recognizable gland tissue. Identical foci of small round cells and ramifying chords were found in the spleen. The picture, in each organ, pointed to the existence of an atrophic scirrhous carcinoma with lymphocytic deposits associated with scar production.

CASE 3.—Mrs. I., aged 45, white, born in the United States, referred to me, Nov. 21, 1921, by Dr. George E. Holtzapple of York, Pa., was the mother of one child, aged 14; there had been no other pregnancy. The patient complained of intermittent attacks of pain in the region of the right costovertebral angle. The first attack occurred about the middle of August, 1921; it lasted four or five days and then disappeared. The pain was worse when she was lying down, and sitting up gave her relief. The pain remained localized in the back. There was freedom from pain until October 21, when it returned, and ever since it had been almost constant when she was lying down. Her appetite was good, and there was no gastro-intestinal disturbance except that the bowels were constipated. Up to this time there had not been any weakness, but she tired more easily than she did formerly. Sleep was sound. There had been a loss in weight of 18 pounds (8 kg.). The stools were normal in color, and jaundice had not been present at any time. She had had the diseases of childhood and an attack of pneumonia at the age of 14. The family history was negative.

The patient was tall, a brunette, with good color and well nourished. The eyes, mouth, teeth, tongue, and tonsils were normal, and the neck, chest, lungs, and heart also appeared normal. No jaundice was present, and there were no genito-urinary symptoms. On inspection, there was a dome-shaped mass in the right upper abdomen (Fig. 5). The mass extended from the middle of the epigastrium to 3 cm. below the umbilicus, and from 5 cm. to the left of the midline over to the right lumbar region on a line with the inner border of the right kidney. The mass was globular, smooth, and semielastic, with a slight suggestion of fluctuation. It was fixed in position and immovable. There were no glandular enlargements; no ascites was present, and there was no venous obstruction and no edema.

The laboratory examinations were made, November 23, by Dr. William Rees, who reported that the urine was straw colored, clear and acid, with a specific gravity of 1.020, and that there was a faint trace of albumin, no glucose, no casts, no acetone, a few erythrocytes, and many epithelial cells, urates and phosphates. The blood examination revealed: erythrocytes, 4,060,000; leukocytes, 8,000; hemoglobin, 80 per cent.; polymorphonuclear leukocytes, 79; large lymphocytes, 5; small lymphocytes, 16; basophils, 0; eosinophils, 0.

The roentgen-ray examination was made November 23, by Dr. William H. Schmidt. The chest was clear and the heart and lungs were normal, as well as the esophagus. Plates taken of the kidneys, ureter and bladder showed no evidence of stone. Fluoroscopic examination revealed that the stomach filled in the upper part first and the contents gradually flowed into the lower part. The lower border of the stomach was 3 inches (7.6 cm.) below the brim of the pelvis. Peristalsis was

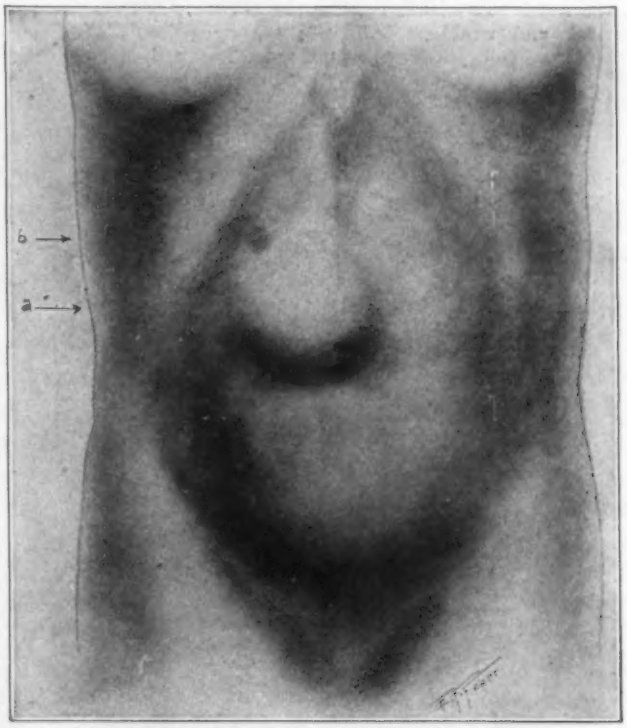

Fig. 5.—Sarcoma of head of pancreas: *a*, larger mass, recognized clinically; *b*, smaller mass in pancreas, found at operation. Both masses proved to be sarcoma in the head of the pancreas.

normal, and the duodenal cap filled normally; no filling defects were seen. After a considerable time the upper part of the stomach still contained barium. The appearance was that of a tumor pressing on the stomach. According to his diagnosis, no pathologic condition of the stomach was evident, and the pressure was from a tumor posterior to the stomach.

The clinical diagnosis was a tumor of the head of the pancreas, probably a sarcoma. The roentgenologist stated during the fluoroscopic examination that the tumor had its origin high up behind the stomach, and that it sloped downward. This suggested that the tumor was more likely to be a cyst, because a cyst could develop in that manner, while a solid tumor would be more apt to grow forward.

Operation under gas and oxygen anesthesia was performed, November 25, and an incision 4 inches (10 cm.) long was made through the right rectus muscle directly over the mass. The gastrocolic omentum was torn through, exposing the pancreas, the head of which contained two tumor masses. The larger mass was spherical, with a diameter of 10 cm., and it occupied almost the entire head of the pancreas. The smaller tumor, which was the size and shape of a normal

gallbladder, arose about 3 cm. from the base of the larger tumor, at the right superior border of the head of the pancreas. The smaller tumor, which was pedunculated, was easily removed. The larger mass, which was hemispherical and which might be compared to half a large orange with the base downward, was encapsulated and, because of the wide attachment of the base, it was removed with difficulty. The tumor mass within the capsule was dark, of a semisolid consistency, and contained a small amount of fluid. The beds of both of the tumors were packed with gauze and drained. The liver, spleen, lymphatics and other structures appeared to be free from involvement. There were no glandular enlargements.

A histologic examination was made by Dr. Allen J. Smith, who reported a large round cell sarcoma of the subdivision endothelioma.

The patient received intensive, deep roentgen-ray treatments administered by Dr. Schmidt both before and after the operation. The first course of postoperative treatments was started four days after the operation, and it was given through the open incision, which was draining. Roentgen-ray treatment was not begun earlier because the patient was suffering from shock and weakness following the operation. The wound continued to drain for ten days, when it ceased, and the patient

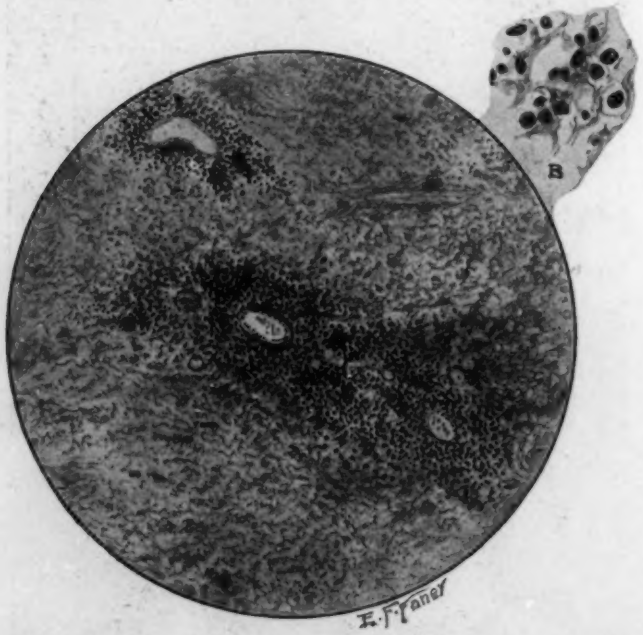

Fig. 6.—Sarcoma of the pancreas: *B*, detail in cellular area in middle of drawing showing type and grouping of cells about capillary blood space.

left the hospital in good condition at the end of three weeks. There was a recurrence of the disease, which was progressing rapidly in the middle of January, 1922; the patient returned to the hospital for further roentgen-ray treatment, February 5, remaining there until February 9. Following this course of roentgen-ray treatments, the growth seemed to have disappeared. She returned to the hospital again, March 10, to continue the treatment. There had been a great improvement in her condition since the previous visit. She said that she felt fine, and that there was a gain of 7½ pounds (3.4 kg.) in her weight. The patient did not return for any more treatments, although she was instructed to do so, and I did not hear from her again.

A letter received, May 8, 1923, from Dr. Holtzapple, stated that the patient had died, Dec. 8, 1922, one year and thirteen days after the operation. In the letter Dr. Holtzapple said: "After the roentgen-ray treatments, there was nothing to be palpated in the upper abdomen. There was no local recurrence. The patient had complained at times of attacks of pain in the mediastinum, and later some edema had developed in the lower extremities. After that he did not see her again for two months, when he found the lower extremities edematous to the bursting point, and an ascites filling the abdomen and pushing the diaphragm far up into the thorax. The abdominal wall was edematous to the costal border. There were very large veins along the sides of the abdominal wall, and the course of the blood flow was toward the chest. There was no edema of the upper extremities or of the upper part of the trunk, head or neck. The heart action was regular. There was no cough, and very little dyspnea. She suffered no pain until shortly before her death. It was his opinion that the edema and ascites were produced by pressure and obstruction of the inferior vena cava, and yet not by much pressure on the spinal column and spinal nerves, for she had practically no pain in her back nor was there any reflected "pain along the spinal nerves."

CASE 4.—May 27, 1909, at the Methodist Hospital, I operated on a man, J. C. W., sent to me by Dr. Henry G. M. Kollock of Newark, Del. I made a diagnosis of chronic pancreatitis and performed a cholecystoduodenostomy. Within two months after the operation, the patient developed a recognizable cancer of the rectum, from which he subsequently died. I made an examination of the rectum before I performed the operation for the pancreatic condition, but the disease escaped detection.

TABLE 1.—*Diseases Found*

Disease	Cases Present	Cases Absent
Jaundice	9	3
Gallstones	1	
Cholecystitis	4	
Duodenitis	3	
Ascites	3*	

* Two moderate, 1 profuse, chylous.

TABLE 2.—*Summary of Cases* *

Condition	No. of Cases	Men	Women
Carcinoma	11	9	2
Sarcoma	1	0	1
	12	9	3

* The average age of the patients was 52; the youngest was 42, and the oldest 70.

TABLE 3.—*Part of Gland Involved*

Condition	Head	Head and Body	Body and Tail
Carcinoma	7	3	1
Sarcoma	1		

TABLE 4.—*Operations* *

Type	Cases	Improved	Deaths
Cholecystoduodenostomy	4	4	0
Cholecystostomy	6	5	1
Exploratory	1	0	1
Extirpation (sarcoma)	1	1	0
	12	10	2

* Operative mortality 16⅔ per cent.

Little can be expected in the way of an improved surgical treatment of cancer of the pancreas until the patients are subjected to an exploratory incision earlier in the disease.

1829 Pine Street.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. MANN AND WILLSON, AND GILBRIDE

DR. G. E. HOLZAPPLE, York, Pa.: Dr. Gilbride emphasized the fact that the symptoms in benign and malignant tumors may be similar. It was so in one of these cases. This woman felt well, except that when she was lying down she had pain in the back. If she sat up, the pain disappeared. She also noticed that she was losing slowly in weight and in strength. Her appetite was good. She was taking all kinds of food, and for this reason could not account for her loss in weight.

Examination of the back revealed nothing abnormal, but in the abdomen there was a globular mass. It was not tender and not movable even on change of position. The surface was smooth and regular in outline. There were no digestive disturbances. Dr. Gilbride removed the tumor—a sarcoma of the pancreas. We both thought it was a cyst of the pancreas. The pathologist made the diagnosis, as he very often does. The patient recovered and did splendidly for about two months. The tumor recurred very rapidly in the same situation. Deep roentgen-ray treatments were given and the tumor melted away, so that on returning home I was unable to find the tumor on deep palpation. Instead of the pain being located in the back, it was substernal, but on physical examination I was not able to find any trouble. In a short while she developed symptoms of pressure on the inferior vena cava and became enormously edematous, from her feet up, and died with almost no pain at all.

THE REPAIR OF DEFECTS ABOUT THE CHIN

FROM THE STANDPOINT OF A GENERAL SURGEON *

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ST. LOUIS

On looking over the literature pertaining to plastic surgery of the face, one is struck by the fact that a great deal has been written on that subject, especially since 1914. Many and various are the papers about the reconstruction of almost any part of the face except the chin. About this phase of reconstruction, I believe less has been published than about any other. This strikes me as being rather peculiar. The chin is a very important feature of the face, and because it is a prominent feature it is more exposed to injury than any other part except, perhaps, the nose.

Fig. 1 (Case 1).—The lower jaw and soft parts of chin and lower lip have been shot away; the bone is missing from below the level of the right coronoid notch to the left bicuspid region. The edema of the tongue is due to interference with return circulation. At first the tongue fell back into the pharynx, but later it hung out.

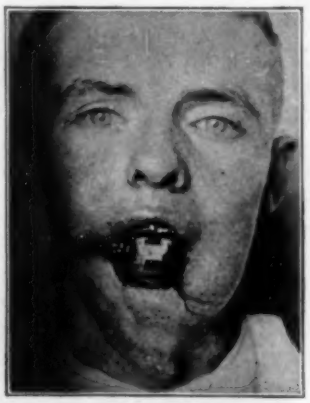

Fig. 2. (Case 1).—The piece of bone introduced has straightened itself out. The appliance in the mouth is for the purpose of retaining the tongue and for immobilizing the fragments.

Certainly, cases of injury to the chin, resulting in its partial or total destruction, were seen very frequently in France, so that opportunity for chin reconstruction must have arisen; but why the dearth of publications and case reports? It is well known that there exist publications offering suggestions as to what may be done. Certain textbooks, written by men more or less prominent during the war, devote considerable time to telling what may be done, but if there are any that actually present anything besides drawings, to illustrate what has been done, they have escaped my notice. There must be a reason for this. My opinion is that the task has proved too great for the specialist; other-

Fig. 3 (Case 1).—The flap has been cut off, and now the anterior end of the rib lies between two layers of skin and fat.

Fig. 4 (Case 1).—The flap after it was gradually raised up and sewed into position to make the chin; no lower lip was to be made until later.

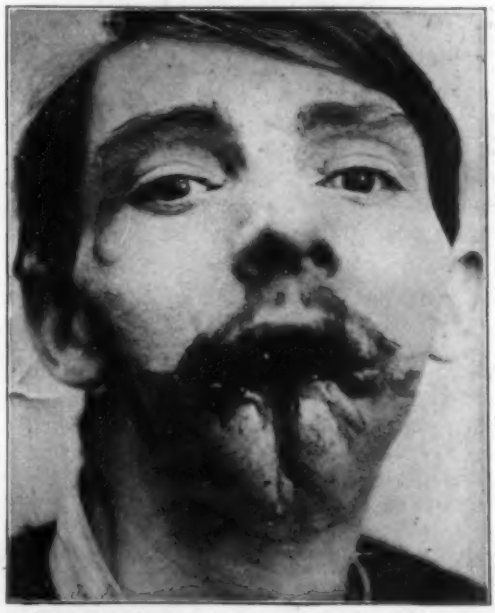

Fig. 6 (Case 2).—Total loss of chin and lower lip; patient wounded in 1914, and repair was begun in 1918; stumps of teeth can be seen, but they were so loose that they were extracted with the fingers.

* Read before the Section on Surgery, General and Abdominal, at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

* Because of lack of space, this article is abbreviated in THE JOURNAL by the omission of several illustrations. The complete article appears in the Transactions of the Section and in the author's reprints. A copy of the latter will be sent by the author on receipt of a stamped addressed envelop.

wise, we certainly would be regaled with cases of chin reconstruction, as we are with cases involving the reconstruction of the nose, lip or eyelids.

Since the surgery of chin reconstruction must lead the surgeon from the face into the neck and beyond it, such cases are, perhaps, more dangerous or more difficult. In both this country and in France I have seen patients in whom chin loss had occurred, with destruction of both the soft and hard parts, and on whom the only attempt at reconstruction made was the insertion of a flap of the soft parts with a promise of bone transplantation. So far as I have ever seen, bone transplantation has never been done later in any of these cases of transplanted flaps.

In speaking of chin reconstruction, one has reference to the restoration of a chin that has been destroyed,

Fig. 8 (Case 2).—The flap turned up into place where it is almost completely healed. No attempt was made to reconstruct the lower lip. The method of immobilization was primitive, consisting of two gauze rolls sewed in place.

either wholly or partly, through accident. There are cases of agnathia brought about not by loss but by failure of development. The cases that I shall report are those in which a part or all of the bony framework of the chin has been lost by accidental means.

In fracture of the arch with loss of substance, the bone is not likely to reunite without treatment, even though the broken ends come in contact with each other, because of their independent mobility and the interposition of the soft parts. However, these broken ends will unite if they are apposed and held in that position. One can see that, if the arch or a part of it is lost and the broken ends of the fragments are brought together and immobilized, union will occur only at the expense of normal occlusion, because the whole dental arcade is made smaller.

Two of the cases to which I refer had been treated in this manner, even bone grafting having been done to bring about this vicious union causing the condition known as "bird face" or "serpent jaw," and leaving the jaw so that no dentist could ever apply a prosthesis that would enable the patient to bite and to masticate his food.

The function of mastication is not the only one affected in loss of the arch of the mandible. The levators of the hyoid bone have lost their point of support above, and dysphagia results. The mouth cannot be closed. Saliva drools, and all power of articulate speech is lost. If to this is added the mental distress experienced through fear of never being restored and made presentable for appearance among his fellows, it is no wonder that suicide sometimes ends the suffering.

Fig. 10 (Case 2).—The chin, covered with a hairy flap from the scalp.

In order to repair the injury, the surgeon must have in mind the restoration of the arch of bone to such size, strength and position that the dental colleague may be able to insert a serviceable denture. The soft parts must be restored at least to such an extent as to prevent the drooling of saliva, and if the tongue is bound down in scar tissue, it must be loosened so that free movement is possible. If these improvements are made, all that is needful will have been accomplished, for it is impossible to bring these to pass without at the same time restoring almost normal function of lips, tongue and jaw.

Such cases can be best treated in collaboration with an intelligent dental colleague who knows how to make and apply a splint to a jaw bearing teeth or to one that is partly or entirely edentulous. Given such assistance, there is scarcely a case that cannot be successfully restored. It must be remembered, however, that the surgeon is in charge of the case, for these cases entail problems that only one having large experience with the principles and practice of major and minor surgery in all their phases can best cope with.

Fig. 11 (Case 3).—The appearance of the patient on his arrival: A case of loss of bony substance from left first molar to right canine, with fracture on the right side at the angle and also in the second premolar region. The anterior fragment on the right side has been swung around and united with the fragment on the left. There is a bony arch, but occlusion is impossible and no appliance could be fitted.

No restoration is attempted until suppuration has ceased and all thickening has disappeared. The parts are immobilized. Pre-

cautions are taken to prevent shrinkage while the skin is growing to the mucous membrane, and the wound is kept clean. No attempt at restoration should be made while any infiltration exists, and the latter can be made to disappear more quickly if massage and heat and light baths are employed.

When both hard and soft parts are missing, it is questionable which should be restored first. This depends on whether free bone grafting must be done or not. If free bone grafting is intended, the soft parts will have to be restored first; but, if the bone is to be lifted with its covering of soft parts attached to it, the restoration of the soft parts may well be left until the last.

Case 1, in which the work was never completed, illustrates an attempt to restore both hard and soft parts at the same time by free bone graft in a flap. Cases 2 and 3 show the results of carrying a flap from the clavicle attached to a pedicle previously made—the flaps were first reinforced by free graft (osteoperiosteal). This is a modified method of Rydygier. The

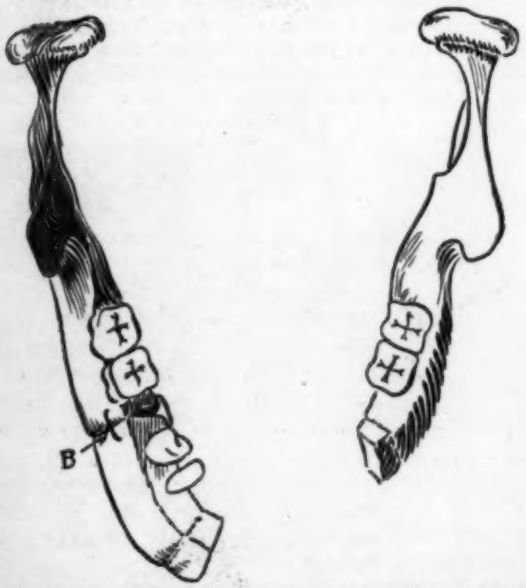

Fig. 14 (Case 3).—The arch, cut in two as indicated, and a wire passed through at point *B*, so that the loose fragment could be swung out, pivoting at this point.

clavicle flap was first used by him in 1892. The swinging of a flap of bone from the jaw itself, attached to the soft parts, across a defect in order to bridge the gap should be called the method of Bardenheuer and not the method of Cole.

It is necessary that immobilization of the fragments should be accomplished before the insertion of flap or graft, although in Case 2 the immobilization was most primitive. The colleague was unable to complete the appliance, and the patient was very anxious that a start be made in his case. The mouth was opened to the widest extent and blocked open by a roll of gauze sewed on either side between the edentulous jaws in the molar region. This immobilized the fragments, and the transplantation of bone was successful, giving the patient a functionating jaw. When the soft parts are not lost, it is possible to obtain a good result by the osteoperiosteal bone graft (Case 4). In this case, one fragment was entirely edentulous and the other contained only three teeth (two of which held only to a projecting bit of gingival process), and yet my dental colleague, Dr. Marré, made and applied for me a splint that perfectly immobilized the fragments and retained them in normal relationship with the upper jaw and with each other.

When there are teeth in each fragment and in the upper jaw, I think it is best to immobilize in closed bite, but if either fragment is edentulous I think immobilization can best be done in open bite.

Fig. 15 (Case 3).—The patient wearing appliance, "bowsprit mast," fixed in plaster cap. A bit of silver wire goes around the anterior end of the right fragment, comes out through the soft parts, and is fastened to this "bowsprit mast" with elastics. It pivots at the point of section (Fig. 14). The pedicle of the flap can be seen on the side of the neck.

To one who has had good success with bone grafting, it is not clear why there are those who believe that a prosthesis without bone grafting gives better results. Case 5 was a case of repair of the soft parts only; they are held out by a well fitting prosthesis made for me by Dr. Lankford of Baltimore. In spite of its excellent appearance and fit, the jaw does not functionate as well as it does in those cases in which I have transplanted bone.

If the fragments have taken up abnormal positions and are fixed in them, they must be moved into proper relationship with each other and with the upper jaw. When, in addition to the chin loss, there has been a fracture of a body or a ramus of either fragment, matters are complicated unless the case is secured before such fracture has united. In Case 3, the body on the right side had been broken in the molar-premolar region, and the arch was missing from the right canine to the left first molar. There was, therefore, a floating piece—from the first molar to the lateral incisor—that swung in and back and down, and united to the proximal right fragment.

Fig. 17 (Case 3).—Work completed: good occlusion, good chin, good functionating jaw. Any ordinary dentist can make a denture to fit.

Of course, to get it back to normal relationship with the latter, it had to be cut at the spot where the fracture had been, and then swung out. In moving such a fragment without destroying its vitality, it is best to do it slowly and not by operative means. It is astonishing what can be done by gently but constantly pulling on a fragment with small elastic bands. To get points of attachment for these is simple, provided there are teeth in the fragment and in the upper jaw. If teeth are lacking, resort must be had to some other means. Sometimes it is necessary to pass a

wire around a fragment and apply a "bowsprit mast" to the head with plaster, in order to accomplish the proper movement of the fragment (Fig. 15).

REPORT OF CASES [1]

CASE 1.—In this patient there was loss of the chin and the right side of the jaw from below the level of the coronoid notch to the left bicuspid region, as well as loss of the soft parts of the chin and a large part of the lower lip. After

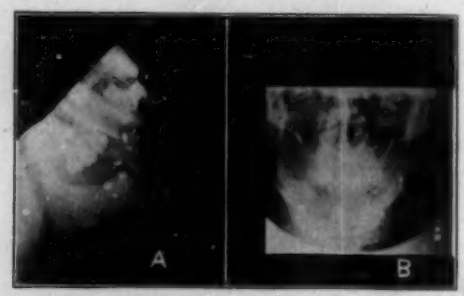

Fig. 21 (Case 5).—*A*, loss of chin caused by a charge of bird shot fired at close range (the right fragment was edentulous); *B*, result five or six months after the bone graft. The arch is not beautiful, but it functionates.

the wound had healed, the edematous tongue was held back inside the mouth by an appliance (made by Dr. Lankford) fastened on the upper teeth. A piece of rib 4½ inches (12 cm.) long was inserted under the skin of the neck, so that its upper end came close to but did not touch the right fragment; its lower end was beyond the middle line about 2 inches (5 cm.) below the mucocutaneous border of the defect. The rib was broken in two places before being inserted, and both fragments reunited in about four or five weeks in such a way that one could not find the site of fracture (Fig. 2).

A flap was then turned up from in front of the sternum with its base above; it was rotated through 180 degrees and passed up behind the deep surface of the embedded rib as far as the mucocutaneous border, thus clothing the posterior surface of the rib with skin. The base of this flap was then cut through (Fig. 3). The next step was to raise this double flap, with the anterior end of the rib between its layers, in such a position as to produce a chin (Figs. 3, 4 and 5).

Great care was taken not to do very much at any one operation for fear of injuring the blood supply of the flap, and extreme care was necessary to keep from uncovering the transplanted bone at any time. Once the soft parts were all healed, it was intended to make the bone contact with the mother bone above and below. Unfortunately I was discharged from the army before this could be accomplished, and I was refused permission to complete the work, although an operation of twenty minutes' duration would have been sufficient. The bone was later removed without any attempt having been made to contact it with the mother bone, and some other scheme was attempted which came near being disastrous. The patient is still living at his home in Virginia, but from the date of the accident to the date of this writing, he has not experienced the joy of chewing his food.

Fig. 23 (Case 6).—Bilateral fracture with necrosis. The central fragment has been drawn backward and downward between the other two. The chin is absent.

CASE 2.—*Restoration by clavicle flap—Rydygier's method.* A French soldier, wounded in the first battle of the Marne, came to me toward the end of 1918 exhibiting total loss of the chin and lower lip as the result of a gunshot wound. There were no firm teeth in the left fragment; the anterior end of the left fragment seemed to be in the bicuspid region, and the right fragment was edentulous. This fragment ended anteriorly just in front of the molar region. The fragments were displaced medially. The problem here was to immobilize the fragments and keep them in proper relation to one another and to the upper jaw while the bone was healing into place. It was decided to restore the chin at one step, and the lip at a later stage.

The first operation consisted in making the pedicle of a flap. Two incisions parallel to each other at about 2 inches (5 cm.) apart were made on the left side of the patient's neck from just below the angle of the jaw down to a short distance below the clavicle. The intervening strip of skin and platysma, with the external jugular vein, was raised and its edges sewed together; it was left attached at each end. The defect from which it had been raised was closed by undercutting. All wounds were allowed to heal.

In the second operation, two vertical incisions, each about 1 inch (2.5 cm.) long and from 2½ to 3 inches (from 6.3 to 7.6 cm.) distant from each other, were made in the skin over the clavicle, the midpoint of the skin lying between the incisions being just below the lower end of the pedicle previously made. Through this incision, with a small circular saw, the clavicle was cut half in two at each point; then, with a chisel, a strip of the clavicle lying between the incisions, almost half its thickness, was raised up from the clavicle without separating it from the overlying soft parts. All wounds were closed and allowed to heal.

Fig. 25 (Case 6).—Left, success attained with ice tongs traction. The pull in two directions may be observed; right, as good a jaw as ever, but the patient needs a plastic operation to remove scar.

In the third operation, a flap with its base above corresponding to the interval between the last two incisions was marked out on the left pectoral region about 2½ inches (6.3 cm.); this was raised half way and returned to its bed. The flap consisted of skin and deep fascia. The wound was closed.

In the fourth operation, the flap was again raised quite to and including the piece of bone previously raised from the clavicle. This bit of bone was now nicked in its midline on the posterior surface, and a fracture was made here by bending the fragment concave on its raw surface. In this concavity were placed three pieces of osteoperiosteal bone graft, one superimposed on the other, filling in the concavity with the idea of making it strong. It was fractured to enable us to bend it so as to give proper contour to the chin. The flap was again returned to its bed and the wound closed.

In the fifth operation, a cut was made through from the pedicle to the upper ends of the incisions, across the clavicle previously mentioned, and the end of the pedicle was lifted up from deep structures above the clavicle. Again the wound was closed and allowed to heal.

The sixth operation consisted of lifting the flap and suturing it in place. This was very simple. The long flap below the clavicle was folded on itself about 1 inch (2.5 cm.) below its tip, with raw surface applied to raw surface. The fold was not made sharp, but was a sort of roll. The edge of the flap was then sewed to the mucosa lying between the ends of the fragments of the jaw, an incision having been made here, removing the scar where skin had grown to mucosa. The

1. The illustrations of patients are reproduced from unretouched photographs.

ends of the fragments were freshened, and a hole was drilled through each. A hole was drilled in each end of the piece of clavicle in the flap, and the bit of clavicle was fastened to the fragments with twenty day catgut passed through the corresponding holes. Skin edges were sewed to skin edges loosely. The vitality of the flap was excellent, and healing occurred by first intention, even though the wound communicated with the patient's mouth.

The immobilization was very primitive. The colleague's appliance could not be completed. Two thick rolls of iodoform gauze were sewed between the lower and upper jaws in the molar regions in order to prop the jaws wide open. All the operations were done under procain.

The next day, because of the rapidity of the patient's pulse and his restlessness, it was necessary to change the iodoform gauze for ordinary gauze.

The patient was discharged before it was time to cut the pedicle, but it was then evident that the graft would be successful and that he would have a well shaped jaw. The work was completed by Dr. P. Sebileau. Figure 9 illustrates how Dr. Sebileau covered the chin with a hairy flap bipedicled from the head.

CASE 3.—*Restoration by means of a flap from the clavicle—Rydygier's method.* The patient was wounded at Soissons, and came into our service about ten days later. There was a fracture of the lower jaw with loss of bony substance from the left first molar to the right canine, a fracture between the right first molar and the second premolar, and a fracture at the right angle. The soft parts of the face, lip, cheek and chin overlying the loss of bony substance had also been carried away, and a through and through wound from the left angle of the mouth down into the neck allowed what was left of lip and chin to hang loosely down in the midline of neck. The anterior half of the tongue and of the floor of the mouth had been carried away.

My dental colleague in this case, Dr. Leonard, ably cooperated. He made the splints and applied them; all went well until the patient developed polyarthritis and bronchopneumonia, and then all retaining apparatus had to be removed. Before they could be reapplied, the loose fragments were firmly fixed in abnormal positions. Elastics were applied to the caps, and the fragments were drawn back where they belonged and retained there. The patient was then discharged. He was operated on somewhere in this country, but was dissatisfied with the result, and came again to my service in 1919. I found his face looking as in Figures 11 and 12, and in the jaw I found union without occlusion. The right canine was close up to the left molar one. Union had occurred; it had occurred at the other fracture sites as well (Fig. 13). Thus the floor space of the mouth was much diminished, and firmly embedded in this space was what seemed rather less than half of the tongue. The patient could neither articulate nor occlude any of his teeth.

With a wire saw, the bone was cut just in front of the left first molar. The left fragment was fixed to the upper jaw (caps and wires), and a wire was passed around the end of the right fragment brought out through the soft parts, with an elastic fastened to a "bowsprit" held out in front by a plaster-of-Paris head piece (Figs. 15 and 16). In this way, I swung the fragment forward and to the right, until the angle of the jaw seemed in a normal position. The anterior end of the right fragment was still too far to the left. The right fragment was then cut in front of the right first molar, and a wire was put through the body here to hold the fragments together; the part carrying the molars to the upper jaw was fastened and then the elastic traction was reapplied as before. The fragment came into position in about two weeks.

A flap from the left clavicle was raised as before, reinforced as before with osteoperiosteal grafts, and turned up and fastened into place between the fragments to replace the lost bone (Fig. 6). Of course, the wound entered the oral cavity and healed, after suppuration. When union was firm, plastic operations were done on the tongue and the floor of the mouth, and a sulcus was made over the new bone by Esser's method (Thiersch outlay and inlay). Then the lips, chin and neck were made presentable (Figs. 17 and 18).

CASE 4.—L. B., a French soldier, suffered a loss of bony substance from a gunshot wound of the lower jaw. The patient came to the hospital within three days after the accident, but, at the time he entered, infection had made considerable progress. The chin was gone; the soft parts gaped widely. The tongue, much swollen, lay in the bottom of the wound, and a suture through it fastened it to his coat. The bone of the lower jaw was missing from the right to the left molar region, and only two teeth (first and second molars) were present on either side (Fig. 19).

An attempt to prevent shrinkage of the soft parts was made. My dental colleague, Dr. Lankford, constructed a projecting splint and fastened it to the upper teeth. Adhesive strips bearing shoe hooks were then fastened to the skin of the flaps and connected with the projecting splint by elastic bands. This is a very useful procedure, although later I used cotton flannel strips and fastened them on with collodion instead of using adhesive tape. They were of use later in performing the plastic operation.

A prosthesis consisting of gutter caps for the molars of each side was applied to the lower teeth. The gutter caps were soldered near the ends of an arch made of heavy piano wire, and were then cemented on the lower molars. The arch then overlaid the former position of the lower teeth. A vulcanite piece (removable) was then modeled in the shape of the bone of a chin, and was attached to the summit of the arch. When healing of the wounds had occurred, the prosthesis was applied, and the soft parts were reconstructed over it (Fig. 20). The patient's condition (tuberculosis) prevented any further surgery for the time being, but he was seen six months later and was still wearing the prosthesis.

CASE 5.—This patient suffered from loss of the arch of the mandible due to a gunshot wound. The overlying soft parts were torn but not destroyed, and the right fragment was edentulous. In the left fragment two molars and two bicuspids were present. The bicuspids held only the gingival process—the bone below was lost (Fig. 21 *A*).

Here, the problem was to immobilize both fragments in their proper relations to the upper jaw and to each other, and to hold them immobilized long enough to enable reformation of the arch to take place by some means. All the wounds were allowed to heal; all pus was eliminated.

An appliance that held the mouth wide open was made under my direction (Fig. 22, left). Thus the two fragments came into proper relationship with each other and with the upper one. The patient wore this appliance for three or four months. An osteoperiosteal bone graft was made, according to the method of Delagénière, and three pieces of bone shaving with periosteum attached were inserted, contacting well with the fragment ends. The restoration was extremely good (Fig. 21, right).

CASE 6.—*Chin loss due to bilateral fracture with necrosis.* The arch between the points of fracture carried the incisors and was drawn backward and downward, and was rotated so that their cutting edges pointed straight forward. There was loss of substance on either side from the canine to the molar region (Figs. 23 and 24, left).

The problem was to draw the fragment to the place in which it belonged, and to hold it there while a bone graft could be made to "take" on either side. Hooks and elastics from lowers to uppers were tried, but it could not be accomplished. Then hooks and elastics from the lower incisors to a "bowsprit" mast fixed in a plaster cap (Fig. 24, right) was employed; this also failed because it increased the rotation. Finally, success was obtained with ice-tongs traction (Fig. 25).

Vermont Mortality Statistics: 1923.—The Department of Commerce announces that the 1923 death rate for Vermont was 1,522 per hundred thousand population as compared with 1,466 in 1922. This increase in 1923 is largely accounted for by the increase in the death rate from influenza (from 41 to 90). Other marked increases appear in the rates from whooping cough, from 5 in 1922 to 9 in 1923, and from measles, from 1 to 11. Notable decreases in 1923 appear in the death rates from pneumonia, with a rate of 100 as compared with 121 in 1922, and tuberculosis, with a rate of 83 as compared with 93 in 1922.

THE RELATION OF HYPERGLYCEMIA TO CATARACT*

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Cataract is associated with a diverse group of diseases, each of which has seemed to bear some causal, though undefined, relation to the changes in the lens of the eye. Diabetes, chronic nephritis with hypertension and arteriosclerosis, thyroid disease, acute infections and dental caries are among the so-called causes of cataract.[1]

All the foregoing diseases have a common feature in that each shows a tendency to the development of a percentage of blood sugar above the normal.

In the study of diabetes it was early established that cataract was likely to occur as a complication. But while the number of diabetic patients developing cataract is high (9 per cent., according to Williamson[2]), the number of patients with cataract who have diabetes is found to be as low as 1 per cent. by de Schweinitz.[3]

The condition with which cataract is most often associated is found in chronic nephritis with hypertension

TABLE 1.—*Patients Having Cataracts* *

Case Number	Age	Glycosuria	Percentage Blood Sugar	Diagnosis
1	82	0	0.18	Arteriosclerosis
2	51	0.48	0.28	Diabetes
3	76	0	0.23	Myocarditis; nephritis
4	73	0	0.22	Hypertension
5	70	...	0.30	Hypertension
6	78	0	0.25	Arteriosclerosis
7	..	0	0.136	
8	65	...	0.160	
9	..	0	0.124	
10	66	0	0.150	Hypertension
11	83	0	0.25	Arteriosclerosis
12	..	+	0.36	Diabetes
13	75	0	0.097	Hypertension
14	..	+	0.25	Diabetes
15	67	0	0.160	Diabetes
16	68	...	0.220	
17	..	+	0.330	Eats much sweet food
18	..	0	0.145	Nephritis
19	54	+	0.23	Diabetes
20	68	+	0.18	Diabetes
21	65	0.33	0.25	Diabetes
22	40	0	0.092	Congenital cataract (?)
23	82	0	0.168	Eats much sweet food
24	52	0	0.130	Eats much sweet food
25	48	0	0.180	Diabetes
26	68	0	0.25	Hypertension; pituitary
27	71	0	0.126	Hypertension
28	..	...	0.145	Eats much sweet food
29	..	+	0.25	Diabetes
30	..	...	0.160	
31	52	...	0.166	Eats much sweet food
32	67	...	0.154	Diabetes
33	61	0	0.110	Hypertension; strict diet
34	82	0	0.143	Cholelithiasis; hypertension
35	67	0	0.143	Hypertension
36	71	0	0.125	Angina pectoris; appendicitis
37	64	0	0.133	Hypertension
38	66	0	0.090	Sugar-free diet
39	..	0	0.143	Eczema

* From the medical department of the New York Infirmary for Women and Children

and arteriosclerosis. Hagelberg,[4] in 1912, called attention to the frequency with which hyperglycemia was found in hypertension. Mosenthal[5] finds that the blood sugar varies in nephritis but is high in some cases of nephritis, eclampsia, essential hypertension and arteriosclerosis. The hyperglycemia in hypertension and nephritis seems to be distinct from a true diabetic condition.

In thyroid disease there is found an alimentary hyperglycemia. Goetsch[6] finds that "fasting hyperglycemia is of extremely rare occurrence in hyperthyroidism. Alimentary hyperglycemia following the administration

TABLE 2.—*Patients Admitted for Cataract Operations* *

Case Number	Per Cent. of Blood Sugar	Case Number	Per Cent. of Blood Sugar	Case Number	Per Cent. of Blood Sugar
1	0.214	31	0.166	61	0.125
2	0.160	32	0.143	62	0.090
3	0.166	33	0.143	63	0.100
4	0.180	34	0.300	64	0.105
5	0.180	35	0.180	65	0.100
6	0.360	36	0.143	66	0.440
7	0.280	37	0.200	67	0.115
8	0.250	38	0.220	68	0.110
9	0.160	39	0.180	69	0.100
10	0.130	40	0.200	70	0.132
11	0.475	41	0.100	71	0.122
12	0.133	42	0.125	72	0.120
13	0.153	43	0.221	73	0.150
14	0.181	44	0.180	74	0.150
15	0.400	45	0.180	75	0.100
16	0.200	46	0.250	76	0.105
17	0.200	47	0.300	77	0.160
18	0.200	48	0.140	78	0.125
19	0.143	49	0.143	79	0.104
20	0.110	50	0.100	80	0.094
21	0.100	51	0.110	81	0.138
22	0.130	52	0.185	82	0.100
23	0.091	53	0.110	83	0.130
24	0.084	54	0.140	84	0.110
25	0.200	55	0.117	85	0.129
26	0.400	56	0.100	86	0.136
27	0.330	57	0.200	87	0.164
28	0.200	58	0.110	88	0.144
29	0.166	59	0.100		
30	0.166	60	0.100		

* Herman Knapp Memorial Eye Hospital.

of 100 gm. of glucose and 50 gm. of bread was observed in every case examined."

In acute and chronic infections, including dental caries, traces of sugar are apt to appear in the urine. Hollinger[7] and others have found a somewhat increased level of blood glucose in typhoid and other fevers.

It is obvious that a combination of hyperglycemia and cataract in these diseases may be incidental. The only way that such a relation could be shown to be causal would be to reduce to normal the percentage of blood sugar in cases of cataract in which there is hyperglycemia and note whether there is a retardation in the rate of development of the cataract. Joslin[8] considers that, in diabetes, "cataracts must have a definite relation to the hyperglycemia, because they occur in young diabetics who have had the disease a number of years." Nicholson[9] reports a case in which opacities over both lenses showed marked improvement after insulin, but reformed later.

S. Weir Mitchell,[10] in 1860, while studying the effects of injecting excessive amounts of sugar into frogs, found that cataracts had been produced in a number of the animals. These cataracts were produced rapidly in from ten to twenty-four hours. In some cases the cataracts would disappear if the frog was soon after given large quantities of water or was partly immersed in water; in other cases, the cataracts persisted.

Dr. Mitchell thought that the cataracts were produced by osmosis—either by the withdrawal of water from the lens or by the increase of sugar in the lens.

* From the New York Infirmary for Women and Children and the Herman Knapp Memorial Eye Hospital.

* Read before the Section on Ophthalmology at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

1. Kirkpatrick, Henry: Cataract and Its Treatment, 1921.
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He considered that the development of cataract in diabetic patients bore no relation to this rapid development of cataract in the frogs; but he adds: "It is possible that the long continued presence of even a small amount of sugar in the blood may cause in the crystalline lens osmotic changes productive of opacity."

The series of observations recorded in the present paper was begun in 1921 through our discovery that a patient with cataract had a high blood sugar although she did not have glycosuria or any other symptoms of diabetes. Other cases have been added as patients with cataracts came under observation. The table of records represents the percentages of blood sugar as found in 132 consecutive cases of cataract. The patients are divided into two groups. Thirty-nine were from the medical department of the New York Infirmary

TABLE 3.—*Traumatic Cataracts*

Case Number	Per Cent. of Blood Sugar
1	0.117
2	0.100
3	0.077
4	0.130
5	0.210 (Diabetic)

for Women and Children and from patients seen in private practice in general medicine. The remaining ninety-three patients were admitted to the Knapp Memorial Hospital for cataract operations and were studied through the courtesy of Dr. Arnold Knapp.

Benedict's method for determining blood sugar was used throughout. In the last 75 analyses, 0.06 gm. of sugar in 3 c.c. of picric acid was used as a standard in place of picramic acid.

In all the cases, the blood was drawn before breakfast.

Ninety-nine patients out of 132 examined have a percentage of blood sugar above 0.12; that is, including the traumatic cases, 75 per cent. of the patients examined had the blood sugar above 0.12 per cent.

The number of cases examined is far too small for one to conclude that a similar ratio would hold in another group. It will be noticed that the patients admitted to the Knapp Memorial Hospital for operation average a definitely lower blood sugar than those seen in the medical service of the New York Infirmary for Women and Children. In the latter hospital, the cataracts were incidentally discovered in

TABLE 4.—*Summary of Cases*

Senile Cataract:		
Infirmary	39	
Memorial	88	
		127
Traumatic		5
Total		132

patients who were under treatment for other diseases. They were chiefly cases of hypertension, but a number had diabetes.

The cases presented in this series are too variable as well as too few to present in other than a preliminary report.

When diabetic patients with cataract are placed on a rigid antidiabetic regimen, the cataracts have been noted as becoming retarded in their development, or arrested, or in a few cases as having in a measure cleared.[11] We have hoped that in the same way, when patients with cataract associated with hyperglycemia from any cause are treated by diet or in other ways so as to reduce the percentage of sugar in the blood, the development of the cataract might be retarded.

129 East Thirty-First Street.

11. Joslin, E. P.: Treatment of Diabetes, p. 601.

ABSTRACT OF DISCUSSION

DR. MAXWELL H. LANGDON, Philadelphia: In the last few years the tendency to limit the study of patients with incipient cataract to urinalysis and circulatory phenomena has been overcome, and a much more complete physical examination is now made in the attempt to discover a causative factor. If the patient has glycosuria, polyuria and loss of weight, with possibly some other condition in addition, we make a diagnosis of diabetes and consider the cataract as a complication of that disease. But what about the diabetes producing the cataract? Is it lack of nutrition or is it an excess of sugar? If the former, the sugar content of the body would not be of interest, if, however, the excess of sugar is the vital thing, anything that increases it would be as serious as would a true diabetes. Burge found experimentally that lenses charged with sugar and exposed to light became opaque, whereas those minus the sugar were not so affected, so apparently sugar has some influence. If it is the sugar, it seems fair to infer that anything which increases it will have a deleterious effect on the lens, whether the underlying disease is a true diabetes or not. A study of the blood chemistry, including the tolerance for sugar shows, in my experience, abnormalities only in reference to the sugar. Blood urea nitrogen and creatinin have been normal in all cases except one, and here the blood urea nitrogen was 42.8 mg. per hundred cubic centimeters of blood, which is a distinct rise. In the present series of cases, the percentage in which the blood sugar is above the upper normal level is much higher than in my own experience, being about 66 per cent., whereas in my series of 100 consecutive cases it was only 17 per cent. The cases in my series have been seen by about ten different observers, mostly, however, by Dr. John Eiman, director of the laboratories of the Presbyterian Hospital, Philadelphia. It has not seemed to us sufficient to determine only the amount of sugar found with a fasting stomach, it seeming equally desirable to know how quickly and completely carbohydrates were absorbed after ingestion, and, therefore, in all cases a sugar tolerance test was done. As Dr. Baldwin and Dr. Barthel have pointed out, many things produce an increase in the blood sugar, but diabetes above all others, and from the height of the hyperglycemia in many cases in their first series the patients must have been diabetic, eighteen of them being well above 220, some over 300. I am sorry that notes of the urinalyses in these cases are not also given. The authors of this paper state their belief that the relation between excessive blood sugar and cataract could be proved only by reducing the sugar to normal and noting the progress of the lens changes. We have done this, and in four cases had a complete arrest of the lens changes for three years, and in one case there has been some improvement in the lenticular condition. In one case, a unilateral lens change in a man, aged 48, with diabetes, the opacity cleared and vision improved from 5/10 to 5/5 partly.

Too much stress should not be laid on the fact that, after any proceeding, changes in the crystalline lens seem to stop their progress, as every one sees cases in which over a period of many years no alteration in the opacities or vision occurs without any apparent reason.

It is of interest that hyperglycemia occurring with cataract has been found in lower animals as well as in man.

Thirty Million Dispensary Visits in 1922.—The first outpatient department in the United States was established in 1786. In 1800 there were three; in 1900 there were 100; in 1910 there were 650, and in 1922 there were 4,000. From 1914 to 1922 there was an increase of 600 per cent. In these 4,000 dispensaries, 7,000,000 people were given treatment, making altogether 30,000,000 visits.—Smith, R. M.: *Hosp. Social Service* **10**:23 (July) 1924.

FAULTY FOOD FACTORS AND ATONIC CONSTIPATION *

FRANCIS LOWELL BURNETT, M.D.
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THE ESSENTIALS OF NOURISHMENT

The complete and proper nourishment of the body is gradually assuming a more and more important aspect. The change has taken place, in part on account of the defects and deficient conditions found in the apparently healthy, in part because of the many and varied conditions of disease produced in animals with incomplete and badly proportioned foods; and, finally, through the improvement made in the well being of children and adults by dietary treatment. When the accessory food factors (vitamins) or the substances essential for nourishment have to be taken into account on the one hand, and the faulty food factors, or the refinement, proportion and abnormal ingredients of the diet have to be considered on the other, the requirements of the ingested material or the alimentary mixture for complete and proper nourishment are somewhat exacting. But this is natural and proper in considering the nutritive needs of the most highly perfected organism.

CATHARSIS, MALASSIMILATION AND ATONY OF THE INTESTINE

As the nutritive needs of the human body are so precise, it is evident that the myriads of civilized persons often taking oils, cathartics, and enemas are not assimilating the nourishment that should be obtained from the food, and are slowly and insidiously producing a deficient condition of their bodies. A few physicians with clear and sound reasoning have attempted to counteract the abuse of cathartics. Thus, Gee [1] remarks: "It is no law of Nature that the bowels should be relieved punctually once in the twenty-four hours. Patience and contentment with Nature's operations are not the worst remedies for constipation." Then Fantus [2] says: "Cathartics are habit-producing drugs . . . Routine purgation, be it preoperative, postoperative or postpartum, be it employed in the treatment of diarrhea, apoplexy, dropsy or uremia, is undesirable." Again, Alvarez [3] observes: "Some of the purgatives are irritant poisons and must be removed quickly from the body. Others act by interfering with intestinal absorption. In either case they bring about abnormal conditions and the body is weakened." Finally, from the experimental observations of Alvarez and Taylor [4] on rabbits, it was found that cathartics produce a feeble and irregular action of the intestines. A continued feeble and irregular action must bring about a weakening of the tissues and a deficient condition of the body; and this observation is similar to that of the effect of incomplete food in animals, as shown by McCarrison.[5] For there is malassimilation with soft and formless feces, and also atony, atrophy and dilatation of the intestine (Figs. 1 and 2). Furthermore, with an atony and dilatation of the intestine, it is easy to understand how this condition will extend to its attachments and bring about a ptosis of the abdominal viscera. And, again, if the glands are atrophied, the digestive fluid must be low in potency and poor in chemical action.

THE PHYSIOLOGY OF NUTRITION AND THE ACTION OF THE PROXIMAL COLON

Interference with intestinal absorption by catharsis has already been suggested, but it is definitely determined from observations on the intestinal rate and the form of the feces. Human feces in discrete masses, segments or units, as shown at the left in Figure 3, have sometimes been thought of as a sign of constipation. Such a form is occasionally associated with infrequent dejections and an abnormal retention of the intestinal contents. But when the unit form of the feces is considered further, it is learned that it is normally dejected by the higher animals, and they are not constipated. Persons regularly dejecting it generally have two stools daily, and patients with eczema and psoriasis changed to it by dietary treatment have improved in health.[6] And, finally, as the unit form of the feces complies with the physiology of the intestine, it affords a very intimate and exact means of applying the knowledge of the intestinal functions to the upkeep of the body in the physiology of nutrition. From this critical point of view, alimentary mixtures in quantity, in refinement, in completeness, and in proportion alone appear to go through the cycle of digestion and absorption, and give the body the amount and kind of nourishment that should be obtained from the food. Consequently, the unit form of the feces seems normal, and may be applied to determine a heretofore unrecognized condition of the body—an improved state of well being. Whereas, when one or more of these requirements are not fulfilled, the mixture does not elicit the complete action of the intestine, and there is malassimilation, the feces are soft and formless, as shown at the right in Figure 3, and are a sign of intestinal indigestion.

In the application of the intestinal functions to nutrition, the ingested material has to go through a great diversity and complexity of action. Some of the normal forms of intestinal motility are the pendulum movement, coordinated peristalsis, and rhythmic segmentation in the small intestine. Then there are peristalsis and antiperistalsis in the proximal colon; the formation of segments or units in the intermediate, and, finally, haustral segmentation in the distal colon. In contrast with these slow and involved actions are the rapid and abnormal forms of motility, or "rush peristalsis," in the small intestine and the mass movement of Holzknecht in the large intestine. The rapid forms of motility probably carry irritant and harmful substances as cathartics through the intestine quickly, whereas the slow and involved actions are for thorough mixing, good chemical reduction, and complete assimilation. The functions of the colon, however, appear to be the most sensitive, and as these actions are identified by the form of the feces, they seem to regulate and control the assimilation by selective action in the physiology of nutrition.

The regulation and control of the aliment in the proximal colon is undoubtedly the chief consideration in an understanding of its passage onward, and the time and

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* From the skin department of the Massachusetts General Hospital.
* Read before the Section on Gastro-Enterology and Proctology at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.
* Because of lack of space, this article is abbreviated in THE JOURNAL by the omission of several illustrations. The complete article appears in the Transactions of the Section and in the author's reprints.

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6. Burnett, F. L.: Intestinal Indigestion in Eczema and Psoriasis, Am. J. M. Sc. **166**: 415 (Sept.) 1923.

kind of defecation. In this part of the intestine, the aliment is confined in a cavity not unlike the stomach, by the pulsating constricting rings of the intermediate colon. When this cavity is filled and aliment of about the same kind is added, it generally discharges regularly, and defecation is regular. But when a badly prepared or proportioned mixture is added, the constricting rings open, and an excess of nutrient material is passed along and dejected. This produces an antagonism of the bowel, though the action, unless extreme, will not give rise to symptoms, but is readily determined by a change in the form of the feces. Now, the proximal colon is no longer replete with aliment; but if the mixture is improved, the additions will be retained, and a day will pass without a dejection. Under these circumstances, the body will be benefited as the intestinal contents again approach completing the cycle of digestion and absorption, and afterward defecation becomes regular.

VARIATIONS OF THE ALIMENT AND ASSIMILATION

A determination of the normal retention has been attempted by Hurst in defining constipation "as a condition in which none of the residue of a meal taken eight hours after defecation is excreted within forty hours." [7] More exact information, however, can be obtained by the ingestion of 50 c.c. of French millet seed with an evening meal, and then noting the number of hours elapsing until five or more seeds are first and last seen

Initial and Final Intestinal Rates

A	B	C
62–158	63–134	62–111
62–159	74–110	37–185
74–182	62– 98	37–125
63–133	44– 92	50–125
62–159	73–146	38–101

easily in the feces. This affords a simple means of determining the initial and final intestinal rates.[8] The retention of the seeds by healthy persons, regularly on a unit basis and generally having two dejections daily, is a good index of assimilation and is shown in the accompanying table.

To acquire this amount of assimilation, the alimentary mixture has to be small in quantity and improved in quality. For a middle-aged man of an intellectual occupation who walks five miles a day, the food amounts to about 100 gm. of protein, 100 gm. of fat and 200 gm. of carbohydrate. It is composed of simple food, thoroughly masticated, and taken in a small breakfast and luncheon, but a good dinner.

A comparison of the alimentary mixture of the healthy with that of the constipated is habitually faulty in one or more respects. In the first place, it is sometimes insufficient or excessive, frequently bolted and consumed between meals. In the second place, it may be badly proportioned or with an excess of carbohydrate, sweet, fat, highly spiced food or fruit; and in the third place, it may be faulty only through containing a cathartic. Alimentary mixtures with one or more of the faulty food factors are hurried through the intestine and give intestinal rates of 15-86, 13-62 and 14-74; and are probably carried along in part by the rapid and abnormal forms of intestinal motility. The abnormal action or malassimilation causes vague symptoms; soft and formless feces are dejected irregularly, and cathartics are begun. The intestinal rate becomes more rapid, and estimates of 10-24, 12-38, and 9-34 are not uncommon. By a more rapid rate, some of the symptoms may be relieved, but more fatigue and exhaustion are experienced, and the body is still further weakened.

THE COURSE AND RESULTS OF TREATMENT

In a clinical study of constipation, Thayson [9] has recognized the weakening effects of continued malassimilation, and has recommended the acathartic treatment of constipation. And by getting his patients to make an attempt to defecate at a regular time each day, natural dejections were frequently brought about on the third or fourth day. The essential consideration, however, in the acathartic and dietary treatment of constipation is to realize that the alimentary mixture must be improved.

As a preliminary, the teeth must be made serviceable, or useful false sets obtained; and hemorrhoids or fistulas should receive proper treatment. In general, however, it is necessary to explain to the patient that the trouble is due not to the intestine but to the mixture. To improve it, the food must be thoroughly comminuted and mixed with the saliva. It must also be of sufficient amount, so that enough residue remains to defecate. Then, it must be eaten only at meal times. Again, it must be simple and wholesome, and without an excess of sweet, fat and highly spiced food. Finally, as the adjustment of a meal in the intestine takes a little time, the patient must try to defecate an hour or so after two of the meals; but straining should never be practiced. When a good alimentary mixture has been obtained, more fruit may added to the diet and cathartics gradually be eliminated. At this time defecation becomes somewhat irregular, and a day may pass without a dejection, but this will generally occur the next morning. Should two days pass, an enema may be used. Finally, by the amount of fruit added to a good mixture, the sensitive mechanism of the proximal colon is nicely regulated. As an adjunct to treatment, it is advisable to have the patient keep a record for a week of: (1) the time spent at meals; (2) the food ingested; (3) the time and kind of dejection, and (4) an estimate of the intestinal rate, somewhat as follows:

Sunday, April 20
8:00 p. m. Took seeds.

Monday
8:00-8:15 Scrambled eggs on toast, one slice of toast, butter, one cup coffee, one orange.
9:15 Soft stool—first seed—initial rate, thirteen hours.
1:00-1:20 Veal cutlet, spaghetti and tomato, squash pie.
7:00-7:30 Consommé, beef steak, potato, cauliflower, two rolls, butter, apple tapioca.
10:00 p. m. No stool.
8:00-8:15 Creamed fish, wheat gems, one cup coffee, prunes.
10:00 Soft seeds.
1:00-1:20 Lamb chop, string beans, rice pudding.
7:00-7:30 Tomato bisque, chicken, potato, apple, celery and lettuce salad, crackers and cheese, chocolate ice cream and cake.
10:00 p. m. Soft stool—seeds.

The record affords a means of controlling the alimentary mixture. It is examined at the end of a week, and suggestions are made. If the faults are not numerous, the patient makes the corrections without keeping a

7. Hurst, A. F.: Constipation and Allied Intestinal Disorders, Oxford Medical Publications, London, Henry Frowde, 1921, p. 73.
8. Burnett, F. L.: The Intestinal Rate and the Form of the Feces, Am. J. Roentgenol. **10**: 599 (Aug.) 1923.
9. Thayson, T. E. H.: Bidrag til den kroniske habituelle obstipations klinic og röntgenologi, Ugesk. f. Læger **81**: 4 (Jan. 2), 37 (Jan. 9), 91 (Jan. 16) 1919.

record. During the third week, however, another full record should be made out and examined. Later, a record should be kept once a month for some time, to insure regular, natural and well formed dejections.

The dietary treatment of atonic constipation has been applied to more than a hundred patients, and all of them have been educated to improve the alimentary mixture, to refrain from taking cathartics, and to allow the bowel to deject its contents naturally. It has been impossible to get accurate estimates of the intestinal rates, or exact information about the subsequent course of all these patients; indeed, it is not at all unlikely that a few have again resorted to cathartics. A majority have been followed for more than three months, and these have appreciated the benefits of improving the nourishment of the body. Besides being freed from the curse of cathartics, some of them have been relieved of persistent headaches, and many of them have felt less exhaustion and fatigue on exertion. Finally, by improving the nourishment, some of the patients with a very deficient condition of the body, as shown in Figure 4, have absorbed 10 or 15 pounds (from 4.5 to 7 kg.) of flesh and blood, as shown in Figure 5, and have brought the body into an improved state of well being.

CONCLUSION

The complete and proper nourishment of the body is gradually assuming a more important aspect. Food in the stomach is thought of as nourishment in the body, without the realization that it is merely in the alimentary canal. The amount and kind of assimilation from the canal appear to vary enormously, and are expressed in variations of the intestinal rate and the form of the feces. Human feces in discrete masses or units comply with the functions of the intestines and afford a critical basis for the maintenance of the body in the physiology of nutrition. From this exact point of view, alimentary mixtures in amount, refinement, proportion and completeness alone appear to complete the cycle of digestion and absorption. Healthy persons with this unusually good absorption have a slow intestinal rate, and yet generally have two dejections a day. Whereas, many persons eating too fast and too much, irregularly, and eating badly proportioned foods have vague symptoms, intestinal indigestion and irregular defecation. Through a gross misconception of the fine adjustment of the alimentary mechanism, the action of the intestine is thought to be at fault, and cathartics are taken. The catharsis makes the intestinal rate more rapid, and may relieve some of the symptoms, but the assimilation is lessened and more exhaustion and fatigue are experienced. On the other hand, by the dietary treatment of constipation, the patient is taught to improve the alimentary mixture, to allow the bowel to nourish the body, and to deject its contents naturally. In this way, more than 100 patients have been educated, and an improved state of mental and physical well being brought about. It is therefore evident, from a critical understanding of digestion and absorption in the physiology of nutrition, that continued catharsis produces an antagonism of the bowel, and is a flagrant breach of the nutritive needs of the body.

205 Beacon Street.

ABSTRACT OF DISCUSSION

DR. LEON BLOCH, Chicago: Heretofore, the study of feces has been limited to organic conditions of the gastro-intestinal tract, as ulcer or neoplasm. Dr. Burnett deserves credit for approaching this subject from a different angle, by emphasizing the appearance of the stool in its relation to the quality and quantity of the food. First in importance, however, is an agreement as to whether the diagnosis of intestinal indigestion is to be based entirely on the appearance of the stool or on the subjective symptoms. Both have to be considered. Atonic constipation is not a simple entity. It may be functional or a part of an organic condition, as chronic appendicitis or cholecystitis. Here, obviously, relief of the primary condition is required for relief of the symptoms. I wish to call attention to the importance of starches and fats as stimulants of peristalsis. It was pointed out long ago that initiation of peristalsis in a proximal segment is brought about by a stimulation of the distal segment. In those instances in which the addition of large quantities of fruits and vegetables are of no avail in overcoming constipation, advantage is taken of the well known stimulant action of carbon dioxid, and fatty acids and soaps on the intestinal tract. The former, the product of intestinal fermentation of carbohydrates, and the latter, of the splitting up of fats, are secured by allowing the patient large quantities of sugars, as honey, marmalade and lactose, and of fats, as olive oil and butter. Both of these substances act by the mechanism referred to. Dr. Burnett's idea of the length of time required for the intestinal contents to pass through the intestinal tract is at variance with the generally accepted opinion of forty-eight hours. Sixty hour retention as the minimum and 140 as the maximum is considered normal by him. This requires confirmation, as at present this is considered to be stasis.

Clinical Notes, Suggestions, and New Instruments

PAIN FROM TUBERCULOUS LARYNGITIS RELIEVED BY COCAINIZATION OF THE NASAL (SPHENOPALATINE, MECKEL'S) GANGLION

L. K. GUNDRUM, M.D., LOS ANGELES

Since Sluder's report of neuralgic pains attributed to a diseased nasal ganglion, many have reported alleviation of symptoms such as glossodynia, cricodynia, otalgia, toothache, painful accommodation and headache, by treatment of this ganglion.

I have been unable, however, to find the report of a case of painful tuberculous laryngitis relieved by such treatment. In two cases of this disease I cocainized the nasal ganglions, using the Sluder technic.

REPORT OF CASES

CASE 1.—P. L., a man, aged 35, Mexican, came to me, June 22, 1924, with hoarseness and severe laryngeal pain. April 1, he had had hoarseness and slight pain in the region of the larynx. The hoarseness gradually increased. At the time of examination, the patient could talk only in a whisper, and pain was present all the time. He was unable to swallow solids, and swallowed liquids only with difficulty. Laryngeal examination showed great swelling of the right arytenoid cartilage, both vocal cords had a mottled appearance, and there was a small ulcer on the anterior third of the right cord. The patient was seen by Dr. C. E. Conn, who confirmed my diagnosis of tuberculous laryngitis, and made an additional diagnosis of pulmonary tuberculosis. Both nasal ganglions were cocainized with relief which was complete for two days. Cocainization was repeated with complete relief for one week.

CASE 2.—Mrs. S. E., aged 35, was seen July 26, 1924, when she was in the last stages of pulmonary tuberculosis. She had complained of severe pain in throat for the past four months, which was accompanied by hoarseness. She was unable to swallow solids, and swallowed liquids only with great pain. Examination of larynx showed great thickening of both arytenoid cartilages. There was so much swelling that I was unable to see the cords. Cocainization of both nasal ganglions gave considerable relief.

1009 Story Building.

USE OF EBERSON YEAST AGAR MEDIUM FOR PRESERVATION OF STRAINS OF MENINGOCOCCUS, GONOCOCCUS, PNEUMOCOCCUS, B. INFLUENZAE AND B. PERTUSSIS *

E. L. BURKY, B.S., BALTIMORE

In 1919 and 1920, Eberson[1] reported a medium for the preservation of stock strains of meningococci. By the use of this medium he was able to keep strains of this organism viable for five months. My purpose in this note is to report the successful use of this medium for periods longer than five months, the simplification of the medium, and the preservation of strains of gonococcus, pneumococcus, *B. pertussis* and *B. influenzae*.

Eberson used a yeast semisolid agar medium, the essential details of which are as follows: A suspension of 10 gm. of bakers' yeast in 100 c.c. of water was steamed at 100 C. for two hours, clarified at the end of that time with dialyzed iron (Merck), and then filtered through a Berkefeld filter. One part of the yeast extract was then added to one part of agar mixture. The agar medium contained 1 per cent. agar, 2 per cent. peptone and 0.4 per cent. potassium phosphate with an end reaction about p_H 7.6. This mixture was then autoclaved at 15 pounds pressure for one-half hour and the yeast extract added with sterile precautions.

The preparation of the yeast extract has proved to be the most difficult part of the procedure, and after several preparations which were satisfactory, as they kept the meningococcus viable for at least three months, the following method was adopted:

A laboratory strain of yeast was grown on a 2 per cent. peptone, 2 per cent. maltose, 0.5 per cent. sodium chlorid unadjusted broth for forty-eight hours in shallow layers in Erlenmyer flasks. This growth was then steamed for one hour over a water bath and then centrifugated until the supernatant fluid was clear. One part of the clear supernatant fluid was then added to one part of 1 per cent. agar solution containing 0.4 per cent. disodium hydrogen phosphate. The mixture was tubed with sterile precautions, the plugs thoroughly impregnated with a mixture of petrolatum and paraffin and incubated for forty-eight hours to determine their sterility. The organisms to be kept viable were then inoculated by transferring a large loopful of a young, rapidly growing culture deep into the medium. The tubes were then kept in the incubator.

This medium was prepared in the spring of 1923, and in it was planted, June 10, a strain of meningococcus (normal, Hygienic Laboratory, Washington, D. C.) which had previously been kept in other forms of the same medium, and a strain of gonococcus, the origin of which is unknown. April 15, transplants from both tubes showed growth. July 20, 1924, it was impossible to obtain growth from the meningococcus tube, and in the meantime the gonococcus tube had been broken. On the same date a culture from a tube planted Aug. 10, 1923, showed growth of meningococci.

April 15, 1924, there was planted in this medium, the following: meningococcus, Hygienic Laboratory, Washington; gonococcus, Hygienic Laboratory, Washington; pneumococcus, Type II, received from Dr. J. H. Brown; *B. pertussis*, origin unknown; *B. influenzae*, recently isolated at necropsy. To the last two mentioned tubes was added 5 drops of rabbit blood after inoculation. After forty-five days, all the strains were viable. July 20, all were viable except the last two.

Practically all of the strains used were old laboratory strains, but the meningococcus and gonococcus required transplanting every forty-eight hours if one wished to be sure of their continued growth. No determinations were made of the viability of the other strains, but it seems safe to assume that it was less on the usual mediums than the viability time on the yeast agar medium.

Eberson has pointed out that growth does not always occur or is less luxuriant when the first transplants are made to ordinary mediums. We have noticed this, and on several occasions found tubes that showed no growth or only a few colonies at the end of twenty-four hours but after continued incubation or second transfer to other mediums produced a luxuriant and characteristic growth. It is also important that inoculation of the yeast medium shall be made from young cultures of the organism on the medium best suited to its growth. On several occasions, transfers have been made from one tube of yeast medium to another with no intervening subcultures on other mediums. The results have been variable. On some occasions, the viability has been retained, and on others, the organisms have died out within a week.

SUMMARY

It has been possible by the use of a modified yeast medium, originally reported by Eberson, to keep viable strains of meningococcus for eleven months; gonococcus for ten months; pneumococcus for three months; *B. influenzae* for forty-five days, and *B. pertussis* for forty-five days.

1833 East Monument Street.

* From the Department of Pathology and Bacteriology of the Johns Hopkins University.

1. Eberson, Frederick: A Yeast Medium for Prolonging the Viability of the Meningococcus, J. A. M. A. 72: 852 (March 22) 1919; Viability of Meningococci in Yeast Agar Medium, J. Bact., Baltimore 5: 431 (July) 1920.

SUDDEN DEATH FROM ECHINOCOCCUS CYST OF LIVER FOLLOWING TRIVIAL INJURY

DENIS S. O'CONNOR, M.D., WATERBURY, CONN.

This case is of interest, not because of the presence of an echinococcus cyst, but because the cyst was the cause of the sudden death of a young man, apparently in good health, following a minor injury.

REPORT OF CASE

A well developed and well nourished Italian, aged 23, employed in a large factory as a driver on an electric truck, failed to stop it while traveling at a speed of about 5 miles an hour, and it crashed into some boxes piled against an iron post. There were two tiers of the boxes, the top tier projecting out over the lower for about 2 feet. No part of the truck came into contact with the boxes, but the driver, to avoid hitting the upper row with his face, was obliged to hyperextend his body, and it is assumed that the lower edge of the upper projecting box struck him in the upper part of the abdomen. He reversed the truck; guided it onto the elevator, and then remarked to his helper that he guessed he had hurt himself. Almost immediately, he placed his arms across his abdomen, began to vomit, and went into a state of collapse. He was hurried to the emergency hospital maintained on the premises. The physician called, who arrived promptly, found the man dead. As far as the attendants could tell, he was dead when brought to the hospital.

A necropsy was performed eight hours after death. There were no external marks of injury. The lips and eyelids were edematous, but there was no edema of the ankles. The abdomen was rather full in the upper half. The abdominal muscles were well developed. A small amount of yellow serous fluid was found in the abdomen. The omentum was all in the upper abdomen, and was much injected. The appendix and intestines were normal. The gallbladder was small, light in color, and empty. The liver on the right side was pushed down below the costal margin about three inches. Several small cystic masses, varying from the size of an American walnut to that of an English walnut were found in the gastrocolic omentum. A large, dense tumor mass was found in the left upper abdomen hidden under the ribs. It was light gray. Further examination showed this tumor mass to be continuous with the liver, and that the suspensory ligament was attached to the top and to the right of it. On exploration with the hand, the mass was found to extend up to the level of the left nipple, and down to the level of the umbilicus. The mass was densely adherent to the diaphragm, omentum and the structures passing upward about the foramen of Winslow. The mass was removed intact with the liver, the left lobe of which it had completely replaced. The stomach, apparently normal, was behind the tumor mass. One large cyst was near the sigmoid colon. The spleen was normal except for congestion. The kidneys were congested. The pancreas was normal. When the tumor was opened, a hydatid

cyst with the characteristic grape cluster of daughter cysts was found. The large cyst contained a slight amount of blood, but no massive hemorrhages. There was some congestion of the lungs. The heart was small, but otherwise normal. The thymus was not enlarged.

It hardly seems possible that a person could have a mass of this size in the upper abdomen without noticing it, but members of the dead man's family stated that he never complained of any symptoms attributable to it.

It is quite evident that the blow in the abdomen produced death. According to the literature, death from echinococcus cyst is caused usually by rupture of the cyst and a subsequent peritonitis. In this case, there was no rupture of the cyst. There was not even the usual subcutaneous bleeding of bruised tissue. There are three possible explanations of the cause of death: (*a*) direct and sudden pressure upward against the heart, impeding its action; (*b*) a sudden blow on the solar plexus with transmission of the shock to the heart, causing it to stop, and (*c*) direct pressure on the vagus nerve, causing inhibition and resultant stoppage of the heart.

The third supposition, i. e., shock to the vagus, I believe to be the correct one. It is not possible to rule out either of the other two, but as the vagus is inhibitory to the heart and motor to the stomach, the concurrence of the vomiting would appear to make this reason the most plausible of the three.

300 West Main Street.

ANEURYSM OF THE RADIAL ARTERY

JAMES A CAHILL, JR., M.D., WASHINGTON, D. C.

D. S. T., a colored man, aged 27, married, employed as a laundry helper at the Bureau of Engraving and Printing, while in pursuit of his usual occupation in the laundry, was sewing rags, which were heavy and required a large caliber needle, about 3 inches long and one-fourth inch wide. While sewing, he jammed his left wrist just above the joint and on the radial side of the flexor surface with this needle. It bled profusely and he was sent to the emergency hospital, where he was treated, and antitetanic serum was given. He was discharged from the hospital, but noticed that his arm and wrist began to swell and that a small lump was forming just above the wrist joint. He first noticed this small swelling nine days after the injury. It began to grow larger and caused him some pain and tingling in the fingers. In a few days he returned to work, but the constant pain and throbbing forced him to give up his occupation, and he was sent to Providence Hospital, where a thorough examination was made. On the left forearm about 1 inch above the anterior annular ligament and just over the radial artery was a mass, about the size of a large walnut, which varied in size, being smaller in the morning and reaching its maximum in the afternoon after the patient had been up and about for some time. It had a visible pulsation, and was smooth, soft and had a definite expansile pulsation. This could be felt around the entire tumor. On auscultation a bruit was heard, but this was not constant, being heard better after the patient had exercised and when the tumor mass had reached its maximum limit. A diagnosis of aneurysm of the radial artery was made. The temperature was normal.

Operation was done under local anesthesia, May 21, 1923. The line of incision extended longitudinally over the radial artery about 3 inches above the anterior annular ligament. The tourniquet was not used, but was put in place in case it might be needed. A complete dissection was made around the tumor mass, and as we dissected open the sac the definite pulsation was characteristic and showed the enlargement of the radial artery as an aneurysm. It was readily dissected free except posteriorly over the annular ligament, where it was definitely adherent. The radial artery was tied about an inch above and also just below the sac, and the aneurysm was removed *en masse*. The wound was closed with a silk suture, and a small piece of rubber tubing was inserted for drainage. The patient made a good recovery; the wound healed by primary union. There was no circulatory or nerve disturbance in the hand.

2607 Connecticut Avenue.

Special Article

GLANDULAR THERAPY

INTRODUCTION *

FRANK BILLINGS, M.D.
CHICAGO

Today it is accepted that the glands of internal secretion have a profound influence on the growth of the body, its development, including the secondary sex characters, the rate of metabolism and other important functions. Laboratory experiments and clinical observation have established opinions in regard to the normal and pathologic physiology of the ductless glands which are satisfactory to many endocrinologists, but which are not accepted by all physiologists and by some clinicians. Among these beliefs or opinions are that: 1. The actions of some of the glands of internal secretions are correlated and, therefore, certain physiologic processes are pluriglandular activity effects. 2. The action of some of the glands of internal secretion is reciprocal, in that some of the glands may become for a time reciprocally operative to compensate for some other undersecreting gland. 3. The alleged reciprocal and correlated action of the glands is explained on the theory that the hormones secreted by the glands are carried in the blood stream and act directly on the distant tissue cells or act indirectly on the cells through the intermediary of the autonomic nervous system. 4. The entire functions of the body may be stimulated, retarded or perverted by hyperfunction, hypofunction or alleged dysfunction of the ductless glands, caused by disease or complete loss of a gland by removal or possibly, in a few instances, by functional disturbances or disease of the autonomic nervous system.

The fragmentary facts on which these theories are based are frequently accepted as the indication for the employment of organotherapy to correct hyperfunction, as when thymus gland is given in exophthalmic goiter; hypofunction, through substitutional organotherapy, as when thyroid gland is given for cretinism; and dysfunction, as when thyroid gland is given for its alleged reciprocal influence on the ovary for the correction of menstrual disorders.

Enthusiastic organotherapists even employ preparations of the ductless glands as detoxicants and also to establish immunity in the prevention of some of the infectious diseases. There are, however, no well established facts on which therapy of this kind can be accepted.

At the present time, substitutional organotherapy alone seems to be based on substantial grounds, and this principle is of practical value only to a limited degree. The use of thyroid gland or of thyroxin in proper doses will overcome the results, partially or wholly, of deficiencies of the thyroid gland secretion. Insulin used daily and properly will restore and maintain carbohydrate metabolism in conditions due to deficiency of the internal secretion of the pancreas. But substitutional organotherapy in morbid conditions of man or animals due to deficient secretion of the glands of internal secretion, by the oral administration of the fresh gland tissues or of dried or otherwise prepared glands, is in an unsatisfactory status. This is due in

* This is the first of a series of articles prepared under the auspices of the Council on Pharmacy and Chemistry. When completed, the series will be published in pamphlet form.

part to the fact that the active principles of the secretions of all the glands of internal secretion, with the exception of the thyroid, are apparently destroyed by the digestive juices of the stomach and bowel.

Pituitary extract and epinephrin must be considered as pharmacodynamic preparations, because, up to the present time, the various preparations of pituitary and epinephrin do not appear fully to take the place of the glands themselves. It must be said, however, that pituitary extract appears to substitute for the gland for temporary periods. The fact that liquid pituitary extract and epinephrin sprayed on the mucous membrane of the nose produces the specific pharmacodynamic effects of these preparations suggests the opinion that the preparations of some of the other ductless glands may exert potent and specific effects when given or applied to a mucous surface, such as the schneiderian membrane and the rectum.

With the exception of thyroxin and insulin, the use of preparations of other glands of internal secretion, hypodermically or intravenously, has not afforded uniform and consistent results that can be definitely ascribed to the specific effects of the internal secretions of the glands. However, it must be stated that the possible good effects of the administration of preparations of the glands of internal secretion subcutaneously or intravenously may be masked by the reactions of the body to a foreign protein administered in the same manner.

Substitutional organotherapy by the transplantation of fresh gland substance has been successfully accomplished, but the length of time during which engrafted tissue retains its specific character and function is variable and uncertain, and the results have been of short duration and of limited value. This renders this form of organotherapy of utility only in selected conditions. The present furore of the transplantation of the gonads for rejuvenation, and especially for the restoration of sexual potency in senile individuals, is attended with such manifest lack of scientific experimental spirit and methods and is so tinctured with commercialism as to make this practice under present knowledge a professional disgrace.

Substitutional organotherapy is embarrassed, too, by the difficulties attending the recognition and interpretation of the symptoms and signs due to the deficiency of the secretion of a single gland. These difficulties are intensified in the case of syndromes due to multiglandular deficiencies and in the necessary differentiation between the morbid conditions due to deficiencies of secretions of the internal glands and deficiencies in growth, development and other morbid condition due to want of sunlight and a properly balanced diet. Substitutional organotherapy is embarrassed also by the fact that we have no means of knowing definitely that the fresh tissues of the glands, or of fresh tissues dried or otherwise prepared, contain the unaltered hormone or active principle of the living glands. Furthermore, minute quantities of thyroxin and of insulin are sufficient to overcome the results of deficiencies of the secretion of the thyroid and pancreas, and it is recognized that doses of these preparations larger than that needed are dangerous and that smaller doses are ineffective. In fact, we do not know what doses, if any, of the specific principles of the internal secretions of other glands are actually contained in the preparations used orally, subcutaneously, intravenously or as enemas.

It must therefore be admitted that at present substitutional organotherapy in the treatment of conditions alleged to be due to deficiencies of the glands of internal secretion, with the exception of the thyroid and pancreas, cannot be utilized in general practice with the hope that definite results will be obtained. This should not, however, deter experimental substitutional organotherapy by clinicians on animals and patients under conditions that will insure scientific accuracy. The experimental studies might well include the transplantation of glands including the gonads, with the hope that this type of organotherapy may become of real benefit when rationally indicated and utilized.

The brilliant results attending the use of preparations of the thyroid, including thyroxin, and of insulin afford reasonable belief that other important glands of internal secretion will be found to yield active principles that will arm us with specific agents for the correction of morbid conditions due to deficiencies of secretion of the respective glands. In the meantime, recognizing our responsibility to the public in this as in other matters that affect the welfare of the people, we should not continue to patronize and support those manufacturers of glandular remedies who make statements of specific virtues possessed by pluriglandular preparations that are without foundation of fact. The existence and continued pernicious influence of the manufacturers of glandular products who publish statements of their therapeutic value without the support of established physiologic and clinical facts will depend on whether the medical profession will patronize them. A decided forward step would be taken if physicians were to limit their use of animal organ preparations to those admitted to the United States Pharmacopeia and the current edition of New and Nonofficial Remedies.

The endeavor has been made to present in this introductory statement the present status of organotherapy as based on existing knowledge of the physiology, both normal and pathologic, of the glands of internal secretion. The judgment and the conclusions formed in regard to problems in biology that are not fully understood today may require a change of opinion and verdict in the future. Therefore, the opinions and judgment expressed in this brief statement in regard to the value of organotherapy today may require readjustment tomorrow.

1550 North State Parkway.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

ANTIRABIC VACCINE (See New and Nonofficial Remedies, 1924, p. 306).

Jensen-Salsbery Laboratories, Inc., Kansas City, Mo.

Rabies Vaccine (Human), Phenol Killed.—The virus is prepared according to the general method of David Sempel. The brain and cord, removed from a rabbit paralyzed on the sixth, seventh, or eighth day following a subdural inoculation of fixed virus rabies is tested for sterility before emulsifying, then reduced to a fine suspension by shaking in a sterile bottle containing beads. The virus is killed by suspending the brain and cord substance in a sterile 1 per cent. phenol saline solution in proportion of 4 per cent. brain substance. This resulting suspension is kept at 37 C. for 24 hours; finally it is diluted with an equal volume of sterile physiological solution of sodium chloride, so that the product as sold contains brain substance, 2 per cent. and phenol, 0.5 per cent. Marketed in packages containing 14 vials and a syringe and in packages containing 21 vials and a syringe. The content of vial 1 and 2 is administered on the first day of treatment allowing 4 to 6 hour intervals; the other doses are administered in sequence at 24 hour intervals until the treatment is completed.

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SATURDAY, SEPTEMBER 27, 1924

WHERE GLUCOSE IS WELCOMED

The well marked pangs felt by a person who has been without food for some time, which are referred to the epigastric region, come and go at intervals. Physiologic investigation has demonstrated that they are associated with recurring strong contractions of the gastric musculature. These hunger pains and their antecedent gastric contractions are inhibited at times; occasionally, they are augmented with an increased tonus of the stomach. Starvation and muscular exercise, for example, have been demonstrated experimentally to increase the gastric hunger contractions. One of the symptoms accompanying the hypoglycemia induced in man by insulin is increased hunger. Such observations have suggested to Bulatao and Carlson [1] of the University of Chicago the possibility that the availability of carbohydrates for utilization by the stomach motor tissues may be an important factor in the genesis or intensity of the gastric hunger contractions. If their hypothesis is correct, experimental increase in the level of blood glucose in normal animals should produce inhibition of hunger contractions, and experimental decrease in that level should lead either to onset of hunger contractions in the quiescent stomach, or to augmentation of hunger contractions when these are already present.

This is, in fact, precisely what has been demonstrated to occur. The experimental hyperglycemia produced by the intravenous injection of glucose inhibits normal gastric hunger contractions. Lactose, which is not used by the tissues directly without preliminary digestion, does not exert such an inhibitory effect. In experimental hypoglycemia produced in animals by insulin, increase in gastric tonus and hunger contractions even of the tetany type appear as the sugar content of the blood becomes lowered. These phenomena are inhibited by glucose, but not by injections of lactose. The Chicago physiologists believe that their observations explain the excessive hunger felt by patients as one of the early symptoms of hypoglycemia, following large doses of insulin. This hunger parallels the increased gastric tonus and contractions. Their hypothesis would also explain the rapid suppression of hunger in fasting persons on taking sugar by mouth, as well as the depression of hunger, especially in children, on eating candies and other sweets between meals. Perhaps this fact will help to offset some of the odium with which a writer in the July issue of *Hygeia* [2] assailed the purchase of nearly 1,000,000,000 pounds of candy a year in the United States.

Definite indications of circulatory insufficiency during insulin hypoglycemia have lately been pointed out—phenomena involved in the "insulin shock" described by Geyelin [3] and his co-workers. From the studies of Edwards and Page [4] at the Cornell University Medical College, New York, it becomes probable that the circulatory symptoms are attributable in part, at least, to changes in the functional activity of the heart. Intravenous injections of glucose produce a remarkably improving effect on such hypodynamic hearts. Whether the disturbing effect of overdosage with insulin on the cardiac activity arises through some process that lessens the supply of combustible material that is in an available form, or whether it is the result of a sort of inactivation or interference with the utilization of other forms of stored potential energy of the heart, remains to be learned. At any rate, we are becoming acquainted with a growing number of contractile mechanisms in the body that are peculiarly sensitive to deviations from the normally well ordered and fairly constant glucose content of the circulating blood.

1. Bulatao, E., and Carlson, A. J.: Contributions to the Physiology of the Stomach, Influence of Experimental Changes in Blood Sugar Level on Gastric Hunger Contractions, Am. J. Physiol. **60**: 107 (June) 1924.

2. Roberts, L. J.: Cutting Down on Candy, Hygeia **2**: 411 (July) 1924.

3. Geyelin, H. R.; Harrop, G.; Murray, M. F., and Corwin, E.: J. Metabolic Res. **2**: 767 (Nov.-Dec.) 1922.

4. Edwards, D. J., and Page, I. H.: Observations on the Circulation During Hypoglycemia from Large Doses of Insulin, Am. J. Physiol. **69**: 177 (June) 1924.

EXPERIMENTAL DIABETES

The question whether, and to what extent, the results obtained with physiologic experiments on one species are applicable to the conditions in others, and particularly in man, is continually being raised. McCarrison [5] has referred, for example, to the general impression that the polyneuritis that is produced by feeding pigeons on polished rice is the same condition as beriberi. In his opinion, this is not the case, for beriberi in man is characterized by cardiac enlargement, which is as important as the polyneuritic symptoms; whereas, in polyneuritis columbarum there is an atrophy of the heart.[6]

There is an almost cynical tendency in certain quarters to minimize the value of animal experimentation for the human clinic. Sometimes, this derogatory attitude is extremely discouraging to investigators, particularly when it concerns fields of study in which progress would be extremely limited if recourse could

5. McCarrison, R.: Discussion of Nutritional Diseases in Animals, Proc. Roy. Soc. Med. (Sec. Comparative Med.) **17**: 19 (April) 1924.

6. The subject is discussed further in the editorial on Beriberi and Rice, J. A. M. A. **82**: 1975 (June 14) 1924.

not be had to the experimental animal. Progress in the treatment of disease often depends on the ability to reproduce the latter for study—obviously not in man. Chemotherapeutic advances call for test animals that exhibit the symptoms requiring a remedy. The development of antiscorbutic foods and of antirachitic therapy was enormously facilitated by the discovery of methods that would produce scurvy and rickets in animals.

The exhibition of glycosuria by depancreatized dogs has furnished an opportunity to further enormously the management and understanding of diabetes. Allen,[7] to whom we owe many contributions of outstanding importance in relation to experimental diabetes, has frankly asserted that one of the chief arguments against the identity of clinical and experimental diabetes in the past has been the difference in respect to acidosis; viz., that the patient with severe diabetes typically dies in coma, while the depancreatized dog dies of wasting and weakness. The greater susceptibility of man to acidosis, as compared with the dog and most lower species, must be recognized. Nevertheless, the identity of the two forms of diabetes is best substantiated by proof that coma can result from the same conditions in the two.

Such proof has lately been furnished by Allen[7] himself, who notes that partially depancreatized dogs are subject to diabetic coma similar to that of human patients, under similar conditions of feeding or fasting. One of the differences between clinical diabetes and that following total pancreatectomy is thus obviated, and the accurate reproduction of all details of the clinical picture, Allen adds, strengthens the unitary conception of diabetes as a purely pancreatic deficiency.

7. Allen, F. M.: Experimental Studies in Diabetes, Series V, Acidosis, I, The Production of Diabetic Acidosis and Coma in Dogs, J. Metabol. Res. 3:775 (May-June) 1923.

WHAT CAUSES OBESITY?

"Are you ashamed of your weight?" This question is the backbone of an attitude that is rapidly attaining prominence in many parts of the country. Obesity is being made the subject of attack from many quarters. From one direction, the threat of diabetes is heard; from the insurance office, the implication that he is liable to be a "bad risk" greets the corpulent person, while his own discomfort on vigorous effort serves as an even more immediate reminder of the consequences of lessened activity. The dressmaker and the tailor dispense additional reminders in the form of friendly, though unwelcome, gibes that drive the victim of adiposity to seek relief by some means. The outcome has been an unprecedented demand for "reduction" treatments, with a preference for ways that are quick and easy. The quack has not been slow to take advantage of his opportunity to extract a rich reward from the gullible.

When we read[1] that "the fat woman has the remedy in her own hands—or rather between her own teeth," and that "she need not carry that extra weight about with her unless she so wills," there is an implication that obesity is usually merely the result of unsatisfactory dietary bookkeeping. When food intake exceeds energy output, a deposit of fat results. Logic suggests that the latter may be decreased by altering the balance sheet through diminished intake, or increased output, or both, and that the procedure is so simple that a professional adviser need scarcely be consulted. The dietitian and the physical culture expert should not, however, be permitted to devise the formulas that shall bring about a huge deficit in body weight.

The problem is not really so simple and uncomplicated as it is pictured. After all, rational treatment predicates a clear understanding of the defect to be remedied. There are renewed indications that much remains to be learned. Obesity is usually made an index or sign of overeating. Mendel[2] has remarked that, if this conclusion is justifiable, it follows that two persons of similar size, with similar basal metabolic rates and comparable activities, should be similarly prone to gain in weight when their food intakes are very liberal. The gain thus becomes a question of the balance of energy—of physiologic bookkeeping, in which intake and output are charged against each other. Experience tends to lead one to question whether the body always responds with such a nicety of regulation. It is often remarked that certain persons remain lean despite a liberal appetite and unimpaired digestion, whereas others deposit fat with apparent ease. Such differences are seen in various breeds of animals, among which some fatten more readily than others.

Several competent investigators have expressed the opinion that there is no characteristic change in the basal metabolism of the obese; and this has recently been verified at the Michael Reese Hospital in Chicago by Strouse, Wang and Dye.[3] For the "rock bottom" requirements of maintenance, the energy charge is no less to the obese than to those of normal weight; there is no lessened metabolism of rest. On the other hand, the Chicago observers found that obesity in certain persons may occur on food intakes much below their calculated caloric requirements; furthermore, the specific dynamic action of protein is decidedly less marked in the obese than in the normal, and there probably exists an anomaly of fat metabolism in the obese, the exact nature of which has not been ascertained. Has not the time arrived for considering obesity as a scientific problem, and talking about it less glibly?

1. Stern, Frances; and Meserve, Rachel T.: Reducing as a Science, Not a Fad, Hygeia 2:419 (July) 1924.
2. Mendel, L. B.: Nutrition: The Chemistry of Life, New Haven, Yale University Press, 1923.
3. Strouse, Solomon; Wang, Chi Che; and Dye, Marie: Studies on the Metabolism of Obesity: Preliminary Report, J. A. M. A. 82:2111 (June 28) 1924.

THE SUPPLY OF PHYSICIANS

The Carnegie Foundation for the Advancement of Teaching, in a report on legal education in the United States, offers some interesting statistics based on the census returns of 1920 concerning the supply of physicians, clergymen and lawyers in the United States. According to the census reports, in 1920 there were 164,781 physicians, 168,348 clergymen and 132,590 lawyers. Incidentally, the figures for physicians included 14,774 nondescript healers and 5,030 osteopaths; the figures for clergymen included 14,078 religious and charity workers, and the figures for lawyers included 10,071 judges, justices, magistrates, abstracters, notaries and justices of the peace. An analysis of the figures in comparison with those of preceding decades shows a 4.3 per cent. increase in physicians; 25.6 per cent. increase in clergymen, and 8.5 per cent. increase in lawyers. There has been a progressive decline in the numbers of all three professions in proportion to the population since 1880, most marked in the case of physicians, who, during the last decade, increased in number less than one-third as fast as the population in spite of the fact that healers and osteopaths are included. Clergymen have increased substantially, and in 1920, for the first time, clergymen outnumbered even physicians.

During the decade ending in 1910, medical education in the United States reached the crest of the wave; the number of medical colleges then exceeded the number in all other countries combined, and they were turning out annually an unusually large number of physicians. Although the total number of physicians is still slightly on the increase, it is not increasing proportionately with the growth of population. During the period ending in 1920, the reorganization of medical education through the reduction in the number of colleges and the adoption of higher educational standards took place. A reduction in the annual output, therefore, was expected, and it would not have been surprising had the total number of physicians been actually decreased. The lowest point of the wave, however, was passed in 1922, and the output of physicians is again increasing. By 1930, the census returns will doubtless reveal a different picture.

If the number of physicians should not increase proportionately with the needs of the population during the present decade and if, in addition to the apparent local shortage, there should be also a general shortage, the problem of how to meet the situation will become the major question in medical education. It is not at all certain that a greater number of men can be induced to enter the practice of medicine by shortening the curriculum or by lowering the cost of medical education. Neither has it ever been established that an increase in the number of physicians will cause any considerable migration of physicians from the cities to the country districts in which a shortage exists. Nor has it been established that medical education can be appreciably improved by eliminating certain subjects from the curriculum or by shortening the time devoted to other subjects. The problem is intricate and complex. Its decision will rest not only with leaders in medicine; with the deans of medical colleges and their official organizations; with the Council on Medical Education and Hospitals of the American Medical Association; with the Carnegie and Rockefeller foundations and the state boards of registration, but also with the mass action of the public. Physicians must give much thought to the problem, and any action should be undertaken with great consideration and caution, following liberal discussion.

Current Comment

GLANDULAR THERAPY

This week, THE JOURNAL begins publication of a series of articles on glandular therapy prepared under the auspices of the Council on Pharmacy and Chemistry. Today, no other phase of therapeutics is subject to more abuse and more fantastic exploitation. Such exploitation has been possible because our knowledge of the physiology and pathology of the ductless glands is comparatively recent, and, indeed, even yet lamentably inadequate. Far more remains unknown concerning their functions and disorders than has been scientifically established. Moreover, as indicated by such discoveries as thyroxin, epinephrin, pituitary solution and insulin, there is no field in which the promise is greater for brilliant physiologic and therapeutic achievement. The present series of articles presents the actual facts thus far available concerning the physiology of each of the glands of internal secretion, the pharmacology of such products as have been derived from it, and the uses of such products in the treatment of disease. Readers will no doubt be surprised at the wide variance between these simple statements of established knowledge and the remarkable claims made by commercial houses which depend on the sale of glandular preparations for their existence.

VASECTOMY AND THE INTERSTITIAL CELLS OF THE TESTIS

Recent years have witnessed an awakening of interest in the ligation of the vas and in vasectomy as possible procedures to induce rejuvenation in the aged and senile. The hope of restoring youth is such an impelling motive that even the prospect of surgical intervention does not seem to dampen the enthusiasm of those who are ready to grasp at each new suggestion toward accomplishing an invigorating end. Rejuvenescence through vasectomy has been assumed to depend on a consequent degeneration of germinal epithelium and hypertrophy of the much advertised interstitial cells. Oslund [1] has reminded us that the idea of producing

1. Oslund, R. M.: Vasectomy on Dogs, Am. J. Physiol. 70: 111 (Sept.) 1924.

rejuvenescence by ligating the vas deferens sprang from experiments on rabbits, rats and guinea-pigs. He has pointed out, however, that a source of error in those experiments lay in the fact that the changes found were produced not by vasectomy but by artificial cryptorchidism. In the latest vasectomy experiments on dogs, as in the earlier ones on other species, in which the outcome has not been complicated by unfavorable location of the testes, the operation has not caused degeneration of germinal cells. In all cases, following vasectomy the interstitial cells were normal, both in quantity and in appearance. A critical review of medical literature reveals the fact that even in man, after as long as four years, vasectomy has produced no testicular changes other than distention of the epididymis. THE JOURNAL[2] has indicated repeatedly that the inevitable result of any observed temporary stimulus simulating rejuvenation after ligation of the vas has been relapse, if not perhaps a shortening of life, because of additional burdens thrown on a senescent organization. The importance of these experimental facts for the debating surgeon is obvious.

MEDICINE AND MATHEMATICS

The advanced student of medicine, the teacher, the research worker, and the general practitioner who is trying to keep up, finds himself more and more handicapped unless he can read the shorthand of mathematics. Unless a *dx* over a *dy*, an integral, a negative logarithm or a standard deviation means something to him, there is not much use in his trying to read a textbook on physical chemistry, or some of the contributions to the *Journal of General Physiology* or a statistical article by Karl Pearson. How will the physician react when he finds his educational advance blocked in this way? Many will probably give up in despair and will turn aside into those paths in which mathematics is not so essential. A few will study enough to understand something of what is going on; will learn enough, in fact, about some of the methods of the mathematician so that when faced with certain problems they will call in experts who can fit curves for them, can calculate formulas, can make nomographic charts or can evaluate statistical data. Another few, particularly of the younger men, will see clearly that much of the future advance in medicine must go through the field of physical chemistry; will face their deficiencies squarely, and will go back to their books or to college for the requisite knowledge. Young men now in college who show promise of great ability in research medicine might well be encouraged to spend extra time in acquiring a good working knowledge of analytic methods which have of late been so invaluable to physicists, chemists and biochemists. Books on the theory of statistics are rapidly increasing, but most of them are relatively unintelligible to the average reader. Medical progress is marked by a greater and greater utilization of methods and data derived from the fundamental sciences. Progressive physicians will find it worth while to have some information concerning the means with which those sciences work.

2. New Experiments on Rejuvenation, editorial, J. A. M. A. 81: 1793 (Nov. 24) 1923.

Association News

MEETING OF THE BOARD OF TRUSTEES

Abstract of Minutes of the Meeting of the Board Held at the Association Headquarters, Sept. 12 and 13, 1924

The Board of Trustees of the American Medical Association met in the building of the Association in Chicago, Friday and Saturday, September 12 and 13. There were present Drs. W. T. Williamson, Chairman of the Board; J. H. Walsh, Secretary; A. R. Mitchell; D. Chester Brown; Oscar Dowling; Charles W. Richardson; J. H. J. Upham; Edward B. Heckel; Thomas McDavitt; and W. A. Pusey, President; F. C. Warnshuis, Speaker of the House of Delegates; A. A. Hayden, Treasurer; George H. Simmons, Editor and General Manager, and Olin West, Secretary.

The Board unanimously approved the dates recommended by the Executive Committee, May 25-29, 1925, for the time of the Seventy-Sixth Annual Session, to be held at Atlantic City.

Dr. J. H. J. Upham, Columbus, Ohio, was delegated to attend the inauguration of Dr. Robert Ernest Vinson, president of Western Reserve University, and the dedication of the new buildings of the School of Medicine, at Cleveland, Oct. 9, 1924.

Dr. George H. Simmons, Retiring General Manager and Editor, presented his report and a report of auditors covering the first eight months of the year 1924, which showed the financial condition of the Association to be most gratifying. On motion of Dr. Oscar Dowling, the Board of Trustees tendered a renewed expression of appreciation to Dr. Simmons for his distinguished services to the Association.

A committee, consisting of Dr. G. E. de Schweinitz, Dr. J. H. Walsh and Dr. Olin West, was appointed to perfect arrangements for the erection of a tablet to Dr. J. N. McCormack, this tablet to be placed in the Assembly Room of the American Medical Association building.

President Pusey announced to the Board that he had requested Dr. Howard Fox of New York to represent the American Medical Association at the Sixth Cuban National Medical Congress, this appointment having been made as authorized by the Board at a previous meeting.

Dr. W. H. Wilder of Chicago, Dr. Arnold Knapp of New York and Dr. William C. Posey of Philadelphia were selected by the Board to constitute a committee to act in an advisory capacity in cooperation with the Bureau of Indian Affairs of the Department of the Interior in its efforts to reduce the prevalence of trachoma among the Indians. This committee was appointed as a result of the adoption by the House of Delegates of resolutions presented by the Section on Ophthalmology at the Chicago Session, after Dr. Hubert Work, Secretary of the Interior, had expressed a desire to have such committee appointed.

The development of a package library service by the library of the American Medical Association, specifically referred to in Dr. Simmons' report, received the cordial endorsement of the Board.

The purchase of two new linotype machines was authorized.

The resolution concerning the holding of joint meetings of the American Medical Association with the Canadian Medical Association, which was referred to the Board of Trustees by the House of Delegates, received consideration. It was the sense of the Board that it would not be possible to conduct negotiations for the arrangement of such joint meetings because of the provisions of Article 10 of the Constitution, which declare that sessions of the Association shall be held in the United States. The Board of Trustees, however, expressed its gratification over the increasing evidences of extremely cordial relations between the physicians of the United States and Canada, as well as between the medical organizations of the two countries, and authorized the Secretary of the Association to extend a general invitation to the members of the Canadian Medical Association to attend the Annual Sessions of the American Medical Association.

The Acting General Manager was authorized to proceed in the usual manner with respect to arrangements for the next Annual Session in Atlantic City.

The Secretary of the Association was requested to present at the next meeting of the Board of Trustees a definite plan, together with an estimate of costs, for graduate extension work to be undertaken by the Association in offering clinical instruction to the members of county medical societies in or near their homes.

The Treasurer, Dr. A. A. Hayden, reported to the Board that he had received a check for $1,500, a donation of Dr. Lucien Howe of Buffalo, to be used for the purchase of a medal or some other suitable form of recognition for conspicuous work in ophthalmology during the year. Only the interest on the principal sum is to be used for the indicated purpose. The Secretary was instructed to acknowledge this donation and to send to Dr. Howe an expression of grateful appreciation for his gift.

Dr. W. C. Woodward, Executive Secretary of the Bureau of Legal Medicine and Legislation, presented to the Board a report dealing with the activities of the Bureau with respect to national prohibition acts, reorganization of federal health activities, a legislative conference and other matters receiving the attention of the Bureau. The Board of Trustees instructed Dr. Woodward to prepare a draft of an act that will comply with the resolutions of the House of Delegates with respect to modification of the national prohibition acts. The Board also instructed the Executive Secretary of the Bureau of Legal Medicine and Legislation and the Acting General Manager to confer in respect to a conference on legislation and to call such conference when feasible.

Dr. C. W. Richardson and Dr. J. H. J. Upham were appointed a committee to revise the rules of the Board of Trustees and to present a report at the next meeting of the Board.

Dr. Olin West was elected Acting General Manager, to take effect at the retirement of Dr. George H. Simmons on September 22, with the powers and duties heretofore exercised and discharged by the General Manager. Dr. Morris Fishbein was elected Acting Editor of THE JOURNAL of the American Medical Association, and Mr. W. C. Braun, Acting Business Manager.

Dr. C. W. Richardson presented a report on the American Medical Association exhibit in the Hall of Health in the Smithsonian Institution, which was approved.

Dr. John M. Dodson, Secretary of the Bureau of Health and Public Instruction, presented his report. An appropriation of $500 or as much thereof as necessary was made, to be used in compilation of a manual on periodic health examination.

Dr. D. Chester Brown, Chairman of the Committee on Scientific Exhibit, reported for that committee, and the usual appropriation was made for the Scientific Exhibit.

Dr. N. P. Colwell presented a report as Secretary of the Council on Medical Education and Hospitals, consisting of a statement describing the work of the Council and detailing the problems under consideration by that body.

The usual routine business of the Board was transacted, and adjournment was taken until Nov. 20, 1924.

Rôle of Uric Acid in Gout.—Although emphasis has been laid on the rôle of uric acid as an indication of gout, and its possible connection with the development of the disease, no suggestion has been made that uric acid is the primal cause of gout. The facts do not warrant any such suggestion although they do indicate that hyperuricemia, or some condition invariably associated with it, is essential for the development of gout. Deposition of urates is a concomitant of typical gout; in atypical gout no surface deposits are noted but they may occur in other parts of the body. None of the various hypotheses that have been discussed offers a complete and satisfactory explanation of the facts and it is more than probable that more than one factor is involved.—Race: *Proc. Roy. Soc. Med.* **17**:36 (Aug.) 1924.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Foreign Visitors.—Dr. Wu Lien-Teh, Chinese delegate to the Pan-Pacific Food Conservation Conference, Honolulu (THE JOURNAL, August 30, p. 693), Dr. H. C. de Sousa Araujo, Rio de Janeiro, Brazil, and Dr. Max Pantaleoni, Rome, Italy, connected with the health section of the League of Nations, arrived in Montgomery, September 5, to study the public health methods and administration of the state health department.

CALIFORNIA

Society News.—The sixteenth annual conference of California health officers will be held in Monterey, October 6-10. The Health Officers' Section of the League of California Municipalities was organized in 1909 and has met annually since that time. Health officers and public health nurses, as well as others engaged in health activities, are invited to attend this conference.

Hearings Before State Board.—At hearings before the state board of medical examiners in July, the citation for Dr. Stuart N. Coleman, Stockton, was based on the record of the federal court conviction of violation of the Harrison Narcotic Law, and his case was continued to the October meeting, owing to an appeal from the judgment of conviction. The license of Dr. Curt O. Dietsch, Los Angeles, who had been found guilty of performing an alleged illegal operation at a hearing before the board in February, 1921, was revoked, as was that of Dr. Eugene J. Rinaldo, Los Angeles (THE JOURNAL, July 19, p. 200), and also that of Dr. Henry C. Viereck, Watsonville, charged with habitual intemperance. Dr. Roy R. L. Sturges, Modesto, who appeared before the board in answer to a citation based on violation of the Harrison Narcotic Law, was found guilty and placed on probation for five years.

COLORADO

Denver Physician Held.—Dr. Ulfert L. Albers, Denver, it is reported, was arrested, September 12, by a U. S. deputy marshal on a charge of violating the Harrison Narcotic Law, in sending morphin through the mails from Frasier to Denver.

Personal.—Dr. Ethel D. Humphrys, Denver, has been appointed acting city manager of health and charity to succeed George A. Collins, who resigned to become superintendent of the new University of Colorado Hospital. According to the Denver *Times*, this gives that city the unique distinction of being the only large city with a woman at the head of the municipal health department.

CONNECTICUT

Public Health Nursing.—The state health department sent inquiries concerning public health nursing to eighty-seven public health nursing associations and to fifty-one school nursing services. All but seven of the former replied, and all but eleven of the latter, and the state department of health filled in these omissions as far as possible. It was found that there are 302 nurses in Connecticut who are doing general nursing, and ninety-three nurses doing full-time school nursing, making a total of 395 nurses employed locally. During the last year, $671,103.48 was spent by the nursing services employing the 302 nurses. Of this amount, $180,135.20 was appropriated by the towns, and the patients paid $94,327.45 of the total for the service they received. The remainder was made up from the sale of tuberculosis seals, from community chest drives, from funds from the Red Cross and various other sources.

FLORIDA

Health Campaign in County Schools.—C. R. Warwick, of the state board of health, is conducting a health campaign during September in which all school children in Polk County will be given a physical examination. A visit was made to every school as a preparatory measure to the examinations

now being carried on. The Morrell Memorial Hospital at Lakeland donated the services of three nurses, and in each community local physicians have been requested to assist.

ILLINOIS

Epidemic Closes Schools.—It is reported that the state board of health closed the schools of the city of Cuba, September 12, on account of an epidemic of scarlet fever which has affected more than 100 of the 600 pupils in the schools. The disease is in mild form.

Physician Forfeits Bond.—Judge Walter C. Lindley declared the bonds of Dr. James E. Inskeep, Carmel, forfeited, September 9, for failure to report in the U. S. District Court for trial on a charge of violation of the Harrison Narcotic Law, it is reported. Inskeep has previously been convicted in a federal court on similar charges.

Hospital News.—A new $100,000 hospital and restaurant will be erected at the Illinois Soldiers' Orphans' Home at Normal.——St. Francis Hospital, East St. Louis, is planning a $250,000 building.——The new $450,000 addition to the St. Francis Hospital, Evanston, will be opened, October 4.——A $200,000 hospital building is being erected for the Dixon State Hospital, Dixon.——Work has been stopped on the proposed enlargement of St. James Hospital, Chicago Heights.

INDIANA

Personal.—Dr. William R. Davidson, Evansville, former president of the Indiana State Medical Association, has been appointed president of the council of that association for the unexpired term of Dr. Eldridge M. Shanklin, Hammond, who resigned.

Worthless Checks.—Dr. Byrl R. Kirklin, Muncie, writes that a man calling himself George Saunders, George Warren and other aliases, is calling on roentgen ray men and giving checks on a distant bank signed by a brother. The checks are for a larger amount than the roentgen-ray bill, and Saunders pockets the difference. The checks are returned from the bank as worthless. Saunders claims to be a stock raiser and has the appearance of one who lives out of doors. He weighs 220 pounds, is 5 feet 8 inches tall, between 40 and 50 years of age, and has a scar on his hand and left elbow.

IOWA

Hospital News.—A forty-bed addition to the present plant will be erected at Broadlawns Hospital, Des Moines.——A hydrotherapeutic building, to cost $125,000, is being planned for the Clarinda State Hospital, Clarinda.

Society Reorganized.—At a reorganization meeting of the Delaware County Medical Society in Manchester, September 2, Dr. Harry M. Bradley was elected president. Dr. Frank M. Fuller, president of the Iowa State Medical Society, and Dr. Tom B. Throckmorton, Des Moines, secretary, attended the meeting.

MARYLAND

Personal.—Dr. John Albert Key has left for St. Louis where he will be in charge of research work at the Shriner Hospital for Crippled Children.——Dr. Hugh J. Morgan, of the Johns Hopkins Hospital, Baltimore, was recently appointed associate professor of medicine at Vanderbilt University Medical Department, Nashville, Tenn.

Physical Examination of Pupils Discontinued.—The routine weighing and measuring, and other physical examinations of pupils in all grades will be discontinued this year in Baltimore public schools, according to orders issued by Dr. Humphrey Warren Buckler, chief of the division of school hygiene. Instead of requiring inspection of all pupils by the physician, the teachers will select those children who show the need of physical examination. The nurse will verify the teacher's selections and on the physician's visiting day these patients will be cared for. From time to time nurses will inspect pupils for defects of the eyes, ears, nose, throat and teeth, and record their findings on cards. Special vision tests will be made of pupils in the fourth and sixth grades and of children noted by teachers as of poor hearing or sight. A new feature of the work this year will be visits of the nurses to homes of sick children. Where children of preschool age are found in need of medical care, parents will be informed of the visiting day of the physician at their school and the children may be taken there for medical examination and attention. Only the pupils in the kindergarten and first grades and new pupils for whom no record is held will be weighed and measured in the schools.

MASSACHUSETTS

Hospital News.—The trustees of the Springfield Hospital, Springfield, have engaged Dr. Sigismund S. Goldwater, director of Mt. Sinai Hospital, New York, to make a survey of the hospital plant with a view toward its future development.

Ripe Olives Released.—Following reports of botulism connected with the eating of ripe olives at Cody, Wyo., and at Coalinga, Calif., the department of health of Boston immediately cooperated with the U. S. Department of Agriculture in an investigation of olives in Boston. The olives especially in question were Ehrmann's, which had been used at Cody, and the Van Camp Sea Food Olives, which had been used in California. The Boston inquiry covered these and other brands of California ripe olives as well as the stocks of olives in seventeen food companies and stores, from which sample cans were submitted to the bacteriologist for examination. The reports being negative, the supplies of olives were released.

MICHIGAN

Necropsies.—The last annual report of the University of Michigan Hospital, Ann Arbor, recorded 123 necropsies among a total of 235 deaths for the year.

Four Chiropractors Arrested.—It is reported that Ernest E. Frey, Minnie Frey, Alfred C. Meyers and Blake D. Lewis, chiropractors of Flint, were arraigned in police court, September 5, on a charge of practicing medicine without a license. The warrants were signed by Dr. Robert B. A. Stephenson, city health officer.

State Medical Election.—At the annual meeting of the Michigan State Medical Society, at Mount Clemens, September 9-11, Dr. Charles C. Clancy, Port Huron, was elected president; Drs. Henry G. Berry, Mount Clemens, and Frank W. Garber, Muskegon, vice presidents; Dr. Joseph E. King, Detroit, speaker of the house of delegates, Dr. William J. O'Reilly, Saginaw, vice speaker, and Drs. J. D. Brook, Grandville, George E. Frothingham, Detroit, and Alfred W. Hornbogen, Marquette, delegates to the American Medical Association. The selection of a meeting place for the next convention was left to the council and will be announced later.

MINNESOTA

University News.—The cornerstones of the Todd Memorial Clinic and the Cancer Institute at the university hospitals, University of Minnesota, Minneapolis, will be laid, October 1.

MISSOURI

Society News.—The Health Conservation Association of Kansas City, which has employed Mr. Jewell as general director, plans to conduct an aggressive campaign this winter to improve health in the city. The component agencies whose work is directed through this association are the Tuberculosis Society, the Cancer Committee, the Mental Hygiene Committee, the Social Hygiene Committee, the Dental Hygiene Committee, the Milk Committee and the Housing Committee, the last two being under the direct control of the Consumers' League which has recently become a member of the association.——The annual banquet of the Randolph County Medical Association was held, September 9, at the Merchants' Hotel, Moberly.

MONTANA

Deputy Health Officers.—The Board of Health of Montana has appointed all forest supervisors in the state as deputy state health officers, as the result of a cooperative agreement just concluded between the forestry service of District No. 1 and the Department of Health of Montana. This work will be incidental to the supervisor's work and performed only to the extent that is possible without interfering with forestry activities. Heretofore, it was necessary for forest officers to report unsanitary conditions found. They may now take direct and prompt action to remedy such conditions.

NEBRASKA

Hospital News.—A 100-bed hospital building, costing $200,000, will be erected at St. Catherine's Hospital, Omaha.

University News.—At a recent meeting of the board of Regents of the University of Nebraska, the following appointments to the College of Medicine (Omaha) were confirmed:

Dr. Harold Gifford, professor of ophthalmology emeritus.
Dr. James M. Patton, professor of ophthalmology and chairman of the department.

Dr. O. M. Cope, assistant professor of physiology and pharmacology.
Dr. Herman F. Johnson, clinical assistant in orthopedic surgery.
Dr. Archibald R. Knode, secretary of the department of laryngology.
Dr. Charles F. Moon, instructor of obstetrics and gynecology.
Dr. A. E. Bennett, clinical assistant in neurology.
Dr. Manuel Grodinsky, clinical assistant in surgery.
Dr. Walter Benthack, fellow in pathology.

The regents also created the department of clinical investigation and Dr. Arthur D. Dunn was appointed professor and chairman of this department.

NEW JERSEY

Dr. Price Resigns.—Dr. Jacob C. Price, Trenton, director of the state board of health, has resigned, effective October 1, on account of ill health. Dr. Price has been director of the state department of health for about nine years and was its secretary previous to the reorganization. Charles J. Merrill, Somerset, has been designated acting director.

Virulent Smallpox.—The state board of health renewed its recommendation, September 11 for statewide vaccination in view of an outbreak of virulent smallpox in Camden and vicinity The most recent fatal case was that of a farmer, who died, August 28; his wife, her sister and mother are now ill with smallpox. Since July 26 five persons have died in Camden and vicinity of virulent smallpox.

NEW YORK

Vassar Hospital Dedicated.—The new $800,000 pavilion of the Vassar Hospital at Poughkeepsie was dedicated, September 18. George E. Vincent gave the dedicatory address.

Infantile Paralysis at Binghamton.—Within a few days three cases of infantile paralysis have been reported to the Binghamton Health Department and two cases have been reported in the village of Green. The Binghamton cases are all in children under five years of age.

Veterans' Hospitals Opened.—The Castle Point government hospital was opened, September 15. Among the speakers were Senator Royal S. Copeland and Dr. Harry A. Pattison, supervisor of medical service, National Tuberculosis Association. ——United States Veterans' Hospital No. 98 at Beacon has also been opened. There are accommodations for 450 tuberculosis patients. Dr. James E. Dedman will be in charge.

Interstate Park Now a Separate Health District.—The state commissioner of health has assigned Dr. Bertrand E. Roberts as sanitary officer to that part of the Palisades Interstate Park which is in the state of New York. A part of seven towns in Orange and Rockland counties is included in the park, and, previous to the establishment of the new health district, the jurisdiction in health matters was divided among officials in all these towns. There have been about 150 summer camps in the park and various water supplies (THE JOURNAL, July 26, p. 277).

The Next Chiropractor Bill.—A digest of the bill which the New York State Chiropractor Society hopes to have introduced at the next session of the legislature has just been made public. The bill, it is claimed, will conform to state requirements in putting examinations for a license under the authority of the State Educational Department, and will define a chiropractor thus: "A person practices chiropractic within the meaning of this act who holds himself out as being able to locate and to adjust by hand misaligned or misplaced vertebrae of the human spine for the purpose of relieving nerve pressure caused thereby." The bill will provide for an examining board of three members to be appointed by the regents from a list nominated by the society.

New York City

Harvey Lecture.—Prof. S. T. L. Sörensen, director of the Carlsberg Laboratories, Copenhagen, Denmark, will deliver the first Harvey Society Lecture at the New York Academy of Medicine, Saturday evening, October 4, on "The Solubility of Proteins."

Chlorin Gas in Pertussis.—Following reports with reference to the treatment of pertussis with chlorin gas by the New York City Department of Health, the *Weekly Bulletin*, September 15, commenting on an editorial on this subject in one of the leading daily newspapers, says:

> Unfortunately, the observations of the chief medical officers of the department of health, who have been studying the value of chlorin gas in respiratory diseases, has failed, thus far at least, to substantiate the reports of benefits from the use of this gas. Should the department, in the course of further researches, find reason to change its present opinion, the members of the medical profession will be promptly informed.

Preventorium for Mental Diseases.—A charter has been granted for the establishment of a neuropathic hospital to function as a preventorium for mental diseases. The need for a hospital of this kind has been shown by estimates of the commissioner of public welfare and other investigators, which indicate that at least 30 per cent. of the persons sent to insane asylums are not insane and that if care and treatment are given in time, much insanity can be prevented. A group of New York business men has pledged $250,000 toward the establishment of this institution. Examination and treatment to those who are unable to pay will be free, and free consultations will be given every day at the hospital. There is only one institution similar to the proposed neuropathic hospital, it is reported, and that is at St. Anne's Hospital, Paris.

NORTH CAROLINA

Report of Orthopedic Hospital.—In the three years of operation of the North Carolina Orthopedic Hospital, there have been 1,572 crippled children received and discharged, according to the superintendent's report which has just been submitted to the press. The capacity of the hospital is sixty beds and there is at present a waiting list of about 100. Eighty-two counties of the 100 in the state have taken advantage of the benefits offered by this institution. The number of children discharged during the last year as "materially improved" was 241. The state appropriation for this hospital was $65,000 and the maintenance cost per patient per day was $2.83. The hospital holds a clinic Tuesday afternoons and parents or friends of indigent crippled children are invited to bring them for examination and enrolment on the waiting list. No charge is made for treatment to any child who is unable to pay.

OHIO

Hospital and Dispensary Defined.—The state department of health has defined the words "hospital" and "dispensary" for the purpose of registration, as follows:

> "Any institution or establishment, public or private, for the reception and care of persons for a continuous period longer than twenty-four hours, for the purpose of giving advice, diagnosis or treatment bearing upon the physical or mental health of such person, shall be considered a hospital."
>
> "Any institution or establishment, public or private, for the purpose of giving advice, diagnosis or treatment bearing upon the physical or mental health of an individual shall be considered a dispensary; provided that a hospital and the quarters of a licensed practitioner of medicine used for his private practice shall not be deemed to come within the meaning of this definition."

Personal.—Dr. Yeatman Wardlow has been appointed chief of the surgical division, White Cross Hospital, Columbus, to succeed the late Dr. Uriah K. Essington.——Dr. John R. Earp, Yellow Springs, formerly connected with the International Health Organization, Geneva, addressed the Green County Medical Society at Xenia, August 7, on "Worldwide Progress of Preventive Medicine."——Dr. Arthur W. Thomas, Youngstown, has been appointed school physician and will devote half time to the work.——Dr. John H. J. Upham, Columbus, addressed the Hempstead Academy, Portsmouth, September 8, on "Hypertension and Arteriosclerosis."——Dr. William P. Edmunds, Washington Court House, has accepted the position of director of athletics and health at Washington University, St. Louis. Dr. Edmunds was athletic director at Washington University for four years prior to the World War. He served as a major in the Eighty-Third Division and after the war was for a time director of the health service department at the University of Michigan, Ann Arbor.

PENNSYLVANIA

Personal.—Dr. Solomon Metz Miller, for twelve years chief resident physician of the men's department, Norristown State Hospital for the Insane, Norristown, has been appointed superintendent of that institution.

Tuberculosis Clinic.—The first clinic, in a series planned for Dauphin County by the Tuberculosis Society of Harrisburg and Dauphin County, was held in Lykens, August 21. The purpose of the society is to provide high grade clinic service for the entire county and especially for people who cannot easily go to the regular clinic in Harrisburg.

Rehabilitation.—The bureau of rehabilitation, during June, returned sixty-two disabled residents of Pennsylvania to suitable remunerative employment with an average monthly wage for each person returned to work of $102.85. At that rate, the earning power of these rehabilitated persons, per year, would be $382,620. There were 4,441 disabled persons on the rolls of the bureau as of July 1.

Philadelphia

Personal.—Dr. Mabel E. Elliott, for several years medical director of American Relief Work in the Near East and Caucasian Russia, and who recently returned to this country, has been appointed to the staff of the Woman's Medical College Hospital.

New Police and Firemen's Clinic.—Chief Police Surgeon Hubley R. Owen and his staff of seven assistants have moved into the Earle Building where the new police and firemen's clinic will be located in a suite of eight offices and two waiting rooms. The clinic has increased from an attendance of ten cases per day in 1907 to about 150 now. Philadelphia was first to establish a clinic for policemen and firemen.

SOUTH CAROLINA

Society News.—At the annual meeting of the Seventh District Medical Association, comprising the counties of Clarendon, Georgetown, Lee, Sumter and Williamsburg, Dr. Arthur H. Brown, Oswego, was elected president; Drs. Charles B. Geiger, Mansfield, W. Minott Gaillard, Georgetown, Henry M. Stuckey, Sumter, Clarence D. Jacobs, Kenstree, and William B. Brigman, vice presidents. The secretary-treasurer is Dr. Carl B. Epps, Sumter.

TENNESSEE

Physician Arrested.—Dr. Cornelius C. Howard, Agnes Place, Memphis, was arrested on a charge of violating the Harrison Narcotic Law, it is reported, and at a preliminary hearing, September 5, was bound over to await action at the November term of federal court. His bond was fixed at $3,000.

Society News.—The third annual meeting of the Walnut Log Medical Society will be held at Walnut Log Hotel, Reelfoot Lake, October 1-2, under the presidency of Dr. Jesse P. Baird, Dyersburg. There will be a barbecue dinner at 12 o'clock Wednesday, scientific programs Wednesday afternoon and Thursday morning, and a banquet Wednesday evening, followed by a public meeting at which Drs. John L. Jelks, Memphis, Robert L. Motley, Jr., Dyersburg, and John C. Paris, Kenton, will speak.——The Chattanooga and Hamilton County Medical Society, under the presidency of Dr. H. Quigg Fletcher, was host to members of the Chattanooga Clinical Congress at its eleventh annual meeting, September 26. Clinics were held at the various hospitals in the city throughout the day and the scientific program was given in the evening after the banquet.

Public Health Nursing in Knoxville.—The consolidation of the visiting nurse staffs of the board of education, the health center, and the children's free clinic, Knoxville, into one nursing service will become effective November 1. The city, which will add three public health nurses, a supervising nurse, and a medical social worker, will be divided into three districts for the treatment of children, and a definite territory allotted to the three free clinics so there will be no duplication of effort. The city will be divided also for the care of adults into two districts, and for the public health nursing service into thirteen or fourteen districts, one public health nurse being assigned to each district. Persons who can afford to pay for treatment and care will be referred to practicing physicians. Several insurance companies of the city have signified their intention to contribute to the maintenance of this work in view of the service they will receive from the data collected.

TEXAS

Physical Examination of School Children.—It is reported that in the reorganized health promotion work of the public schools of San Antonio every pupil will be given a physical examination by a physician and the results recorded. Forty physicians will devote some time each day for about three weeks to this work. A report of the examination will be addressed to the parents or guardians of the child, advising them, according to the findings, to consult their family physician. Heretofore, school children have been examined by public school nurses who were regularly employed throughout the year.

VIRGINIA

Personal.—Dr. Coleman B. Ransone, for three and a half years head of the Newport News Department of Health, has resigned, effective October 1, to become health officer of the city of Roanoke.——Dr. E. C. Levy, Richmond, who retires as director of public welfare, October 1, was tendered a silver fruit bowl and candlesticks by his associates in the department of welfare.

Societies Organized.—The Hanover County Medical Society was organized at Ashland, August 18. Dr. T. J. Stanley, Montpelier, was elected president, Dr. Alfred C. Ray, Ashland, vice president, and Dr. John A. Wright, Doswell, secretary-treasurer. The Floyd County Medical Society was reorganized, July 26. Dr. Jabez M. Harman, Floyd, was elected president; Dr. Silas T. Yeatts, Floyd, vice president, and Dr. Roley T. Akers, Alum Ridge, secretary-treasurer.

State Medical Meeting.—The annual meeting of the Medical Society of Virginia will be held at Staunton, October 14-17. Drs. Albert J. Ochsner, Daniel A. Orth, both of Chicago, and Dr. John O. Polak, Brooklyn, among others, are on the program. The subject for general discussion is endocrinology. Hotel Stonewall Jackson will be the headquarters for the scientific sections and exhibits, and the women's auxiliary will hold its first meeting there at 10:30 a. m., October 15.

Medical College of Virginia.—A chair of neurologic surgery has been established at this school with Dr. Claude C. Coleman as professor and James G. Lyerly, associate. H. L. Osterud, Ph.D., succeeds Gustave J. Noback, M.S., as professor of anatomy; Dr. Charles Phillips, recently of Wake Forest, N. C., succeeds Dr. Ward H. Cook as professor of pathology; Dr. Kellog F. Bascom will be associate professor of anatomy; Drs. Pauline Williams and K. Hosoi, instructor and assistant, respectively, in pathology; Dr. R. W. Fowlkes will be instructor in dermatology and syphilology; Dr. Charles Bidgood, instructor in genito-urinary surgery; Drs. Frederick W. Shaw and D. M. Faulkner will be associate professors in bacteriology and orthopedic surgery, respectively, and Drs. J. Kirk Richardson and G. S. Terry, assistants in gynecology and nervous and mental diseases, respectively.

WISCONSIN

Physician Fined.—Dr. Daniel R. Connell, Beloit, was fined $500, August 26, by Judge Luse for violating the terms of his prescription permit, it is reported. Dr. Connell was fined $750 on two counts charging the sale of liquor, last year.

Hospital News.—A $150,000 addition is being erected to the Deaconess Hospital, Milwaukee.——An addition is being erected for the St. Nicholas Hospital, Sheboygan, which will increase the bed capacity to 300.——The Marquette Hospital, Milwaukee, was taken over, August 1, by the Franciscan Sisters.——Bids will soon be taken for a $450,000 addition to St. Mary's Hospital, Superior.

CANADA

Public Health News.—There are five cases of smallpox in one family near Chatham, Ont., according to the provincial health inspector, Dr. McNally, who made an investigation.——An outbreak of infantile paralysis has occurred in Brantford, Ont., and some neighboring cities have epidemics of the disease. The last epidemic in this city was from July 8 to September 26. Seventeen cases were reported and three deaths.——Three cases of infantile paralysis were reported from London, Ont., recently.

Personal.—Dr. Harold Orr, formerly clinical assistant in dermatology at the London Hospital, London, Ontario, has been appointed lecturer in dermatology and syphilology in the University of Alberta, and physician to the skin department of the University Hospital.——Dr. Edward R. Davies, a recent graduate of Dalhousie University Faculty of Medicine, has been appointed resident physician to the Aberdeen Hospital, New Glasgow.——Dr. Archibald McCallum, for several years at Halifax in the capacity of surgeon lieutenant-commander, has severed his connection with the Canadian navy and returned to his home in Ontario. Before leaving, Dr. McCallum was tendered a banquet by his associates.——Dr. Hamilton C. Cruickshank, director of the health laboratories, City of Toronto, Ont., has been recommended by the medical officer of health to succeed Dr. Grant Fleming, former assistant medical officer of health, resigned. Dr. Fleming recently accepted a post with the Anti-Tuberculosis and Medical Association, Montreal, Que.——Drs. Henri A. Lafluer, Montreal, Que., and William A. Thomson, of Regina, Sask., and Peter A. McLennan, Vancouver, have recently been appointed members of the Medical Council of Canada for a term of four years.——Dr. Stanley E. Baker, Toronto, has gone to Johns Hopkins Hospital, Baltimore, to be first assistant to Dr. Thomas S. Cullen.

GENERAL

Social Workers' Headquarters.—The headquarters of the American Association of Hospital Social Workers, after October 1, will be at 30 East Ontario Street, Chicago.

Editor Appointed.—E. E. Free, formerly of the U. S. Department of Agriculture, has assumed the editorship in chief of the *Scientific American*, succeeding Austin C. Lescarboura, who recently resigned.

Lye Legislation.—The Executive Board of the National Medical Association has voted to support the legislation now pending in Congress to restrict the indiscriminate sale of concentrated lye and other caustic and corrosive substances. Members of the association will be asked by the board to cooperate toward procuring the enactment of such legislation.

Red Cross Conference.—The fourth annual national convention of the American Red Cross will be held in Washington, D. C., October 6-9. Among the speakers are Dr. Livingston Farrand, president of Cornell University; Dr. Charles P. Emerson, dean of the Indiana University School of Medicine; Brig.-Gen. Frank T. Hines, director of the U. S. Veterans' Bureau, and Judge Payne, chairman of the Central Committee of the National Red Cross. At one session, each national director of a Red Cross service will give a five-minute address on the problems of his service.

Quarantine Regulations.—Dr. Rupert Blue, director of the New York district of the U. S. Public Health Service, has advised the North Atlantic conference of steamship passenger lines, that hereafter tourists traveling in the special third cabin will receive the same treatment by medical authorities on arrival at New York as cabin passengers. These regulations have been applied for some time in Europe to "tourist parties." In view of complaints of American tourists in the third class on steamers not specially reserved for the tourist trade, who have found themselves classed as immigrants, the promulgation of this ruling is opportune.

Campaign for Pharmacists' Headquarters.—At the recent national convention of the pharmaceutical association in Buffalo it was announced that about $400,000 had been subscribed toward a fund of $1,000,000 to erect a headquarters building to serve all pharmaceutical interests. In the beginning the campaign was designated as one for the American Pharmaceutical Association headquarters building fund, but a change of viewpoint has taken place recently and the undertaking has developed now into an all-pharmacy movement. It is now a campaign for the All-Pharmacy Headquarters Building Fund which is being obtained and administered under the auspices of the American Pharmaceutical Association.

Personal.—Lemuel Herbert Murlin, LL.D., president of Boston University since 1911, was elected president of DePauw University, Greencastle, Ind., September 6, by the board of trustees. Dr. Murlin succeeds George R. Grose, LL.D., who resigned, following his appointment as a bishop of the Methodist Episcopal Church.——At the semiannual meeting of the American Association of Hospital Social Workers, Buffalo, October 6-10, Dr. Winford H. Smith, superintendent of the Johns Hopkins Hospital, Baltimore, and Dr. Alec N. Thomson, medical secretary, Committee on Dispensary Development, New York, will lead the discussions on "The Social Worker at the Admission Desk" and "The Results of Hospital Social Service," respectively.

American Public Health Association Meeting.—At the fifty-third annual meeting of this association in Detroit, October 20-23, under the presidency of Dr. William H. Park, New York, Dr. T. Madsen, chairman of the Health Section of the League of Nations, will address the first general session Monday evening, October 20. The second general session, October 22, will be presided over by the Forum Committee of the association; the third, on Wednesday, will be a symposium on "Values in Public Health." Dr. George F. Dick, Chicago, among others, will address the public health administration section. There are nine sections in the association, each of which will be addressed by a number of prominent men. Dr. R. M. Olin, state health commissioner of Michigan, is chairman of the local committee arranging for the meeting. The American Society of Civil Engineers will hold a meeting directly following the American Public Health Association meeting and a joint session between the sanitary engineering divisions of both organizations has been arranged.

Society News.—The Medical and Surgical Association of the Southwest, embracing the states of New Mexico, Arizona, western Texas and the northernmost states of old Mexico, will hold its annual meeting in Phoenix, Ariz., November 6-8.——At the annual meeting of the American Electrotherapeutic Association, New York, September 10, Dr. William T. Johnson, Philadelphia, was elected president; Drs. Norman E. Titus, New York, Harry E. Stewart, New Haven, Conn., Tilman Howard Plank, Chicago, George J. Ott, Boston, and Willard P. Whittington, Asheville, N. C., vice presidents; Dr. John Willard Travell, New York, treasurer, and Dr. Richard Kovacs, New York, secretary. The trustees elected were: Drs. Byron Sprague Price, Sinclair Tousey and William B. Snow, all of New York.——At the annual meeting in Montreal, Que., Canada, of the American Academy of Ophthalmology and Otolaryngology, September 15-20, Dr. Horace Newhart, Minneapolis, was installed as president; Dr. John M. Wheeler, New York, was elected first vice president, and Dr. Luther C. Peter, Philadelphia, secretary.——The twenty-sixth annual conference of the American Hospital Association will be held at the One Hundred and Sixth Armory, Buffalo, October 6-10, under the presidency of Dr. Malcolm T. MacEachern, Chicago.

Per Capita Requirements of Narcotics.—A narcotic survey of Allegany County, Maryland, was made in May by the U. S. Public Health Service in connection with drug addiction studies. The object was to secure accurate information on narcotics used annually for medical purposes in a certain area so that a basis would be obtained for computing the requirements of the whole country. The survey consisted in visiting all the narcotic registrants in the county and compiling from their records the amounts of narcotics used in one year. There were sixty-nine physicians, twelve dentists, twenty retail and three wholesale pharmacists, one veterinarian and five hospitals and sanatoriums, whose records were examined in detail. On the basis of a population of 69,938, the per capita consumption of opium for Allegany County would be 6.98 grains; and of coca leaves, 29.32 grains. To supply the entire United States at this rate, assuming the population to be 106,000,000, would require the importation annually of about 105,697 pounds of opium and 443,988 pounds of coca leaves. Du Mez, of the Hygienic Laboratory, who reported the survey, considers that the quantities dispensed represent fairly accurately the medicinal requirements at present. A census taken later would no doubt show a much smaller quantity of cocain used, as many of the dentists have discontinued using cocain in favor of synthetic local anesthetics. The Maryland State Board of Health cooperated in making the survey.

LATIN AMERICA

Epidemic in Nicaragua.—An epidemic of intestinal diseases, due to a contaminated water supply, has produced the highest death rate in the history of Managua, it is reported. In a total population of 30,000 there have been 1,200 deaths in three months.

Spanish Hospital Planned at Valparaiso.—The *Medicina Ibera* relates that the Spanish Sociedad de Beneficencia of Valparaiso has purchased grounds for a model hospital to be known as the Hospital Español de Chile. The staff will consist of physicians trained in the hospitals of Spain.

Foundation of Argentine Anticancer Society.—A number of physicians at Buenos Aires have organized the Sociedad Argentina para el Estudio del Cancer and elected Drs. A. H. Roffo, president; E. Jonquiéres, vice president; A. Astraldi, secretary, and J. Leyro Díaz, treasurer. Monthly meetings are to be held at the Instituto de Medicina Experimental.

Society Elections.—The newly elected officers of the Bahia Medical Society are Drs. J. A. Garcez Fróes, president; C. O. Ferreira de Moura and Fernando Luz, vice presidents; Alfredo Britto, secretary general; Floriano Silva and A. Alfonso de Carvalho, secretaries, and Carlos Levindo de Moura Pereira, treasurer.——The twentieth anniversary of the National Academy of Medicine at Caracas was celebrated recently. The officers elected for 1924-1926 were Drs. J. de D. Villegas Ruiz, president; F. A. Risquez and S. Córdoba, vice presidents; A. Jiménez Arráiz, treasurer, and L. Razetti and H. Rivero Saldivia, secretaries. Dr. Domingo Luciani succeeds Dr. Andrés Herrera Vegas in the management of the *Gaceta Médica*, of which Dr. L. Razetti is director, the official organ of the academy. The code of ethics adopted by the academy in 1918 has been accepted as the model throughout Latin America, and was thus officially acclaimed at the Sixth Latin American Medical Congress at Havana in 1922. The court of appeals in Venezuela, however, has declared it unconstitutional. The prizes offered by the academy in 1925 are for the best work on endemic diseases in Venezuela, especially from the standpoint of prophylaxis, and on the treatment of tuberculosis.

FOREIGN

Dermatologic Museum.—To celebrate his twenty-fifth anniversary as professor of dermatology, Dr. Keozo-Dohi, of the Tokio Imperial University, contributed $25,000 to establish a dermatologic museum and his students and colleagues contributed $7,500.

Smallpox in England.—Twenty cases of smallpox were reported at Forest Town, a village near Mansfield, England, within three days recently. There are also seven "fresh" cases at Mansfield, five being in one house. All the patients have been taken to the Nottingham Isolation Hospital.

Typhoid in Tokio.—The death rate in Tokio compared with the pre-earthquake conditions has increased 100 per cent., according to the *Japan Medical World*. There have been 7,391 cases of infectious diseases in the eight months following the earthquake, and of these 1,556 were fatal. During June, there were 1,573 cases of contagious disease, and of these 802 were typhoid fever.

School of Pathology at Cambridge.—In response to the appeal of the Cambridge University authorities, Mr. Ernest Gates, of Yorks, has promised funds necessary to complete the endowment of a school of pathology. The trustees of the Rockefeller Foundation, New York, recently offered the University of Cambridge £100,000 to build the school of pathology and £33,000 toward its endowment, provided the university would obtain the remaining £33,000 to complete the endowment. The generosity of Mr. Gates makes possible the acceptance of this offer.

Course of Instruction.—A graduate course of instruction will be given from Oct. 6 to Nov. 28, 1924, at the National Hospital for the Paralyzed and Epileptic, Queen Square, Bloomsbury, England. It will consist of outpatient clinics, clinical lectures on the anatomy, physiology and pathology of the nervous system, and clinical demonstrations of methods of examination. Among those who will teach will be Drs. Gordon M. Holmes, Joseph G. Greenfield and Henry J. Macbride. Inquiry should be addressed to Joseph G. Greenfield, dean of the medical school.

Village Settlement for the Tuberculous.—The Cambridgeshire Tuberculosis Colony, a few miles from Cambridge, was started by Dr. Varrier-Jones several years ago. In the most recent report there were shown to be 196 persons in the colony, including seventy children. Patients are admitted in all stages of tuberculosis and they work according to their strength. There is no limit to their length of residence and they are encouraged to settle permanently with their families in the colony. The village, Papworth, has provided ideal home conditions for these patients within the reach of the workingman. Papworth takes the family as a single unit and provides housing, education and facilities for training the members to become skilled artisans. Dr. Jones says, in *The World's Health*, that in Papworth no communist spirit exists, yet help for each other is an outstanding feature of the community. This experiment is being closely watched in England by all who are interested in the tuberculosis problem as it affects the working classes.

Personal.—Dr. Louis Vervaeck, director of the Belgian laboratories for records of criminals, has been decorated by the government of Luxemburg in gratitude for services rendered the penitentiary service.——Dr. Vincent G. Babeski, who will teach in the new school of public health at Warsaw, and Dr. C. F. Chellappah, medical officer of health of the government sanitation department of Ceylon, are in the United States studying public health administration as guests of the International Health Board.——Dr. A. Lutrario, who has long been at the head of the public health service of Italy, has changed to the international health service of the League of Nations, which has headquarters at Paris. Dr. A. Messea, his previous assistant, has succeeded to the charge of the national service in Italy.——Dr. A. Pironti has left the post of director general of the national hospital service in Italy to take charge of international organization along the same lines.——Dr. Palacios Olmedo was presented with an engraved address and was the guest of honor at a banquet recently in tribute to his work in a tuberculosis dispensary in Madrid.

Deaths in Other Countries

Dr. **Tommaso De Amicis**, professor emeritus of dermatology at the University of Naples, senator, and author of numerous works on dermatology and venereology, aged 85. He presided at the international congress on dermatology at Rome in 1912, and the surplus left from the congress was devoted to a biennial prize, known as the De Amicis Fund, administered by the Italian Dermatological Society.——Dr. **Albert Hoffmann**, president of the Basel Medical Society and chief medical officer of the Basel Life Insurance Company and of several hospitals, aged 68.——Dr. **Bruno Salge**, director of the Infant Asylum at Dresden, professor of pediatrics in turn at Göttingen, Freiburg and Strasbourg, aged 52.——Dr. **Nada Slawik**, Trieste, on the staff of the Regina Elena Hospital.——**George Heaton**, formerly vice president of the section of diseases of children, British Medical Association; examiner in surgery at the University of Oxford and lecturer on operative surgery at the University of Birmingham; author of "Surgical Interference in Diseases of the Stomach"; August 12.

CORRECTION

Current Tendencies in Medical Education.—In a comment on a letter with this title in THE JOURNAL, September 13, p. 862, the quotation, "New occasions teach new duties," was credited to Longfellow. Dr. Berton Lattin writes that the quotation is not from Longfellow but from Lowell, "The Present Crisis."

Government Services

U. S. Public Health Service

Surgeon W. W. King has been directed to proceed from Paris, France, to Seville, Spain, to attend the Second National Congress of Medical Sciences, October 15-20.——Acting Assistant Surgeon C. E. Athey has been directed to proceed from Progreso, Mexico, to Campeche, Mexico, to investigate the yellow fever situation at that place.——Surgs. George W. McCoy and Taliaferro Clark, Washington, D. C., and Surg. William S. Bean, Jr., New York, have been directed to proceed to Detroit to attend the meeting of the American Public Health Association, October 20-23.——Asst. Surg. Kenneth F. Maxcy has been directed to proceed from Montgomery, Ala., to El Paso, Texas, and such other places on or near the Mexican border as may be necessary, in connection with an outbreak of typhus fever in those areas.

Surgeon General Issues Statement on Defense Day

In a formal statement summarizing the work of the medical profession in cooperating with the War Department in its National Defense Day program, September 12, Surg.-Gen. M. W. Ireland declares that the profession "gave splendid evidence of support of the National Defense policy."

"Officers of the Medical Reserve Corps and members of the profession not so enrolled responded to the call in a most gratifying manner, and contributed materially to the success of the nation's test of its citizens' availability for the protection of the country in emergency. I desire to express my sincere appreciation of the support which the medical profession is giving to the War Department in the effort to develop adequate medical service for the army. The obligation for the organization in peace of the units of the Medical Department is approximately placed on the medical profession of the country. Supervision of this organization as the military representative of this profession is one of the outstanding obligations of my office.

"Numerically, the Medical Department Sections of the Officers' Reserve Corps are inadequate for the War Department plan. Very definite progress has been made in the development of units of the Medical Department, but the organization is far from the perfect machine which the achievements of the medical profession should warrant. Efficient organization cannot be effected without a Medical Department Reserve of 20,000 medical officers. Only 50 per cent. of this enrollment has been attained. I cannot urge too strongly the necessity for completion of the medical program at an early date, and it is my sincere hope that the medical societies will present to their membership, and the officers of the Reserve Corps to their colleagues, the importance of enrolment in the Reserve.

"Further, our organization plans are imperfect, and I desire that officers of the Reserve Corps give the War Department the advantage of constructive criticism which will aid the harmonious and efficient development of medical units which will serve the army efficiently and to the credit of the profession."

Foreign Letters

LONDON

(From Our Regular Correspondent)

Sept. 8, 1924.

Sir William Maddock Bayliss

The death of Sir William Bayliss, F.R.S., has removed one of the greatest of contemporary physiologists. Born in 1860 at Wolverhampton, he entered the business of his father, an iron manufacturer. Commercial life proving distasteful, he took up the study of medicine. In 1881 he entered University College, London, and came under the influence of two great teachers—Ray Lankester and Burdon-Sanderson. In 1882 he took the B.Sc. degree and obtained a scholarship in zoology. But he could take little interest in the dry bones of human anatomy, and failed in this subject at his M.B. examination. He then abandoned the idea of a medical qualification and devoted himself to the study of physiology. He followed Burdon-Sanderson when that teacher was transferred to Oxford, and took a first class in the final school of natural science in physiology. He returned to London and again worked at University College, this time under Professor Schäfer. He first completed a research with John Rose Bradford on the electrical phenomena accompanying secretion. In 1890 he began to work with E. H. Starling, who later became Jodrell professor of physiology at University College, and this scientific partnership continued all his life. To it physiology is indebted for discoveries as to the electrical phenomena of the heart, the action of nerves on the heart, the regulation of the circulation, the movements of the intestine, pancreatic secretion, and the action of hormones. He also carried out important researches on vasomotor nerves with John Rose Bradford and on the circulation of the brain with L. E. Hill. In 1893 he produced a classical paper on the depressor nerves, and in 1908 a series of papers on vasodilator nerves. In 1908 he published a monograph on enzyme action which has gone through four editions. When, in 1899, Starling became professor of physiology, Bayliss helped him in teaching, first as assistant, then as assistant professor, and finally as professor of general physiology. From 1904 onward, he published a long array of important papers for which he alone was responsible, dealing chiefly with physicochemical problems of physiology and the mode of action of enzymes. In 1914 appeared "The General Principles of Physiology," which may be regarded as the culmination of his life work. Since the appearance of "Foster's Textbook," a generation back, nothing comparable had been published. In it the principles of physiology were expounded by a master who had not only the intimate grip of the specialist but also the wide outlook of the biologist and the philosopher. Hence its use not only by physiologists but by pathologists, zoologists, botanists and chemists. His main object is to discuss the physical and chemical processes that intervene in the phenomena of life. The success of the book was such that in America two Bayliss societies were formed to read and discuss at regular intervals various chapters. When the preparation of a fourth edition was delayed by Bayliss' illness, the work was undertaken by a score of the younger physiologists under the editorship of Starling's successor at University College, Prof. A. V. Hill.

Vital Statistics: An "Older" Nation

The annual report of Sir George Newman, chief medical officer of the ministry of health, contains some interesting facts and figures about the changes in age distribution of the population now taking place. Generally speaking, they point to the conclusion that a falling death rate, on the one hand, and a falling birth rate, on the other, are raising the average age of the people considerably. Thus we are becoming an "older nation" in a new sense. In 1841, children under 5 constituted 13.2 per cent. of the population; by 1911—after rather more than thirty years of a declining birth rate—the proportion had declined to 10.7 per cent., a decrement of 2.5 per cent. In 1921, only 8.8 per cent. of the population were under 5 years of age; the decrease in these ten years was more than 78 per cent. of the whole decrease over the previous seventy years, and two and a half times as great as between 1901 and 1911. The proportion of young children was only 66 per cent. of what it had been eighty years ago. On the other hand, the proportion of persons over 65 was 36 per cent. greater than in 1841. In 1921, for the first time, the first quinquennium of life did not contain a larger number of living persons than any other quinquennium. Even in 1911 there were more children under 5 than persons in any other quinquennial group, but in 1921 the most populous age group was 10-15. By 1923 it was estimated that the proportion of males aged 0-5 had increased sufficiently to make this the most populous group, but the maximum for females was in the age group 15-20. These figures indicate that the female population is now older than the male as well as more numerous, thus giving point to the cynical comment that "the world will soon be overcrowded with grandmothers."

The year 1923 was remarkable for the lowest death rate and infant mortality rate on record (11.6 and 69 per thousand births, respectively). The birth rate, 19.7 per thousand, was also the lowest recorded, except during the war years. But it is necessary to be circumspect in drawing unduly favorable conclusions. It is obvious that the general death rate of the country cannot be diminished indefinitely. A time must come when no further improvement is possible. It is the number of unreasonably premature deaths that we must seek to reduce. It is fallacious to measure the public health conditions wholly by changes in the general death rate. The low mortality of 1923 was in part an expression of the present age distribution of our population and meteorological conditions conducive to the health of infants and elderly persons. Another factor was the absence of widespread epidemics. However, after all necessary qualifications had been made, the health of the country in 1923 was encouraging, and the expenditure on its maintenance is yielding a very high rate of interest in life and well being.

On the other hand, there was much sickness and physical impairment, resulting in absence from work, broken time, and restricted productivity. Probably, Sir George Newman argues, such loss of time due to sickness, most of which is preventable, costs the country not less than ten times more than that which it loses as a result of strikes and labor disputes. The total number of weeks represented by the sickness and disablement payments in 1923 is estimated at about 6¾ million weeks' sickness and 6 million weeks' disablement for men, and at 4¼ million weeks' sickness and 3½ million weeks' disablement for women. These figures, which do not include the first three days of incapacity, for which sickness benefit is not payable, give a total of 20½ million weeks' work lost in 1923 through sickness, or a period of 394,230 years.

The birth rate is falling in geometrical progression, though the war upset the rate of movement for a time. The time must therefore come when the population will be stationary; but this is unlikely to occur during the present generation.

Progress has been made in dealing with diphtheria and typhoid fever; but scarlet fever continues to cause much trouble. Influenza remains out of control, and epidemic encephalitis is a growing menace. As to smallpox, 2,602 cases occurred in England and Wales in 1923. The incidence of smallpox has shown a notable increase in England since 1921, and there appears to be no evidence that we have

reached the zenith of the recrudescence. Sir George Newman draws attention to the grave risks incurred in respect of smallpox as a result of the large proportion of the population which is not vaccinated. The tuberculosis figures for 1923 are encouraging, and show a reduction of more than 1,000 in the male deaths from "consumption" as compared with 1922, and a reduction of more than 700 in the female deaths. This reduction is the more satisfactory when the serious amount of unemployment prevalent is considered.

The returns for 1923 confirm the views indicated by the figures in 1921 and 1922—that there has been a decline in the incidence of venereal diseases. So far as syphilis is concerned, there is a considerable diminution in the number of fresh infections. The medical officers of many treatment centers state that it is now rare to see a primary case of this disease.

Decline in the Number of Medical Students

The great increase in the number of medical students following the war reached its climax in 1919, when the number entering the profession was 3,500. In 1920 the number fell to 2,500, and the decrease has continued at a rapid rate. It is anticipated that when the medical schools assemble in October there will be a further marked decline in the entries. For this movement various causes are given. The large number of physicians who have qualified since the war has produced repletion. The cost of qualification has greatly increased with the extension of the curriculum to six years. The war has had a detrimental effect on the financial condition of the classes that furnish medical students. Trade and commerce, which always offered greater monetary prizes than the profession, now have appreciated socially. Many firms now go to the universities for their young men, and the universities help them to secure the best. The possibility of further state interference in the profession and the reduction of physicians to officials, remote though it appears to be, has a deterrent effect on some. Finally, as explained in previous letters, the Indianization of the Indian Medical Service has cut off a most important field for British physicians.

Healthy London

The latest figures show that London is one of the healthiest cities in the world. For the five weeks ending August 2, the death rate was the remarkably low one of 8.5, a decline of 1.1, or more than 13 per cent. compared with the corresponding period of 1921-1923. Going back to July, 1874, the death rate was 22.9, or 14.4 above last month's rate. The most significant feature of these figures is the remarkable decline in infant mortality. While last month about seventy infants under 1 year of age died each week in London, fifty years ago the number reached the high figure of 500. Statistics show that in the course of eighty years the Londoner's lifetime has been extended more than twenty years. The diseases that made such inroads on the population of London—influenza, bronchitis, pneumonia, measles, scarlet fever, diphtheria and, so far as children are concerned, diarrhea—are being gradually curbed, while the labors of state and voluntary agencies in inculcating rules for preserving health, particularly among the young, are bearing fruit. Whereas the expectation of life was only 34.6 years for males and 38.3 for females in the period 1841-1850, it was 53.8 and 59.1, respectively, for the period 1920-1922.

Diagnosis and Treatment of Poliomyelitis in London

At a meeting of the London County Council, a joint report was presented by the education and public health committees on the result of a survey of the position in London regarding the early diagnosis and notification of poliomyelitis and the facilities for treatment. Although poliomyelitis is compulsorily notifiable, a number of cases, chiefly mild abortive ones in which there is no obvious paralysis, are not notified, owing to the difficulty of recognition. The total number of cases of poliomyelitis notified in London during the last ten years has been 824. The committees have considered, in consultation with the ministry of health, the best steps to secure early diagnosis. The ministry has under consideration the issue of a circular to metropolitan borough councils suggesting, among other things, that the councils should circularize physicians in their areas on the subject. An arrangement is also to be made whereby experts will be available to assist in doubtful cases. Inquiry has also been made as to the provision available in London for the treatment of poliomyelitis and the resulting crippling conditions, and the subject has been considered at a conference of orthopedic surgeons. Generally speaking, it is possible for the voluntary hospitals to provide institutional treatment for cases in the first stage (from three to six months); the second stage (extending from eighteen months to two years) is the most difficult for the voluntary hospitals to cope with, and it is impossible for London hospitals, which deal in the main with the acute stages of the disease, to set aside beds for such a long period. The third stage of the disease, characterized by various contractures and deformities, may call for operative treatment, and for this purpose again a period of prolonged residence in hospital should be provided. The two committees have come to the conclusion that it would be more satisfactory to deal with cases requiring operative treatment at the most suitably equipped London hospitals, and to transfer them later to other institutions. The Metropolitan Asylums Board provides treatment in its fever hospitals for cases of poliomyelitis in the early and acute stage, and is prepared, if the minister of health agrees, to provide additional accommodation, in order to take in cases referred to it by the voluntary hospitals, child welfare organizations, and central or local public health departments. It is hoped by earlier diagnosis and more resolute treatment in the first stage to diminish the number of cases that reach the second and third stages.

PARIS

(From Our Regular Correspondent)

Aug. 29, 1924.

Chemicals and Bacteria in Future Warfare

The interesting but troubling question of the use of chemicals and bacteria in warfare will come up for discussion before the fifth assembly of the League of Nations, which will convene soon at Geneva. As early as 1921, during its second session, the assembly of the League of Nations asked the commission on the reduction of armaments to study into the question of the use of chemicals in warfare. This investigation was entrusted to a special commission composed of Viscount Cecil, Admiral Aubrey Smith, General de Marinis and Colonel Requin. The commission appealed for information to chemists, physiologists and bacteriologists of various countries, requesting them to give as exact and complete an account as possible of the effects produced by: (1) warfare with chemicals in the form of the most powerful explosives, toxic products and gas, with which we are already familiar; especially since the progress realized during the recent war, and (2) warfare with bacteria, if its effectiveness should induce a nation to make use of it, in opposition to all human law. To these questions, replies were received from Professors André Mayer, of the Collège de France; Angelo Angeli, of the royal institute of higher instruction in Florence; Pfeiffer, of Breslau; J. Bordet, of the Pasteur Institute in Brussels; W. B. Cannon, of the Harvard University Medical School; T. Madsen of Copenhagen; Senator Paterno, of the University of Rome, and M. J. Enrique Zannetti, of Columbia University, New York.

CHEMICAL WARFARE

The current term "war gas" does not correspond to the scientific definition of gases. War gas contains, in reality, not only gas but also solid or liquid substances, which are sprayed into the air and the effects of which on the human body are such as to produce lesions due to distinct chemical modifications of the mechanical effects produced by explosives. From the sole point of view of their physiologic effects, these noxious substances may be divided into three main groups: (1) irritant substances (lacrimogenous, sternutatory and vesicant); (2) suffocating or asphyxiant substances, and (3) toxic substances. The lacrimogenous compounds cause an intolerable pain in the eyes, rendering a person practically blind so long as he remains in the atmosphere impregnated with this gas. The efficacy of the lacrimogenous gases, together with the fact that they cause no permanent injuries, has led to their adoption by many police administrations. They make it possible to capture criminals without sacrificing human life. The sternutatory gases are arsenical compounds that cause repeated paroxysms of uncontrollable sneezing, attacks of suffocation, and unbearable pains in the head. They induce the person to drop the mask that protects him, and thus cause him to expose himself to the action of other toxic products projected at the same time as the sternutatory gas or immediately after it. The vesicant products, such as dichlorethyl sulphid, called also "mustard gas" or "yperite," produce lesions of the skin and the mucous membranes which may be very grave. Their action on mucous membranes is such as to entail necrosis, leaving a raw surface susceptible to infection. Although the action of vesicant gases may be successfully combated and even destroyed, in certain cases, they are nevertheless capable of producing grave results. Furthermore, soil permeated with mustard gas contaminates, through contact, those who pass across it or are encamped on it. Yperite penetrates the fabric of garments and makes of them veritable vesicatories, which communicate their vesicant properties through simple contact. The soil and the objects permeated with the gas preserve their aggressive action for several days. The suffocative or asphyxiant substances cause pulmonary edema. Carbon oxychlorid, or phosgen, has proved to be the most effective gas of this group. Other substances act directly on the blood, such as carbon monoxid, which causes death by a more or less sudden failure of the heart's action, usually without pain. The absence of pain and the ignorance of the existence of any lesion increase the danger, for it is difficult to get the victim to realize the gravity of his condition and to prevent him from exerting himself in such a manner as to fatigue a heart already overtaxed.

Finally, there are the poison gases, such as the compounds with a hydrocyanic acid base, which promptly paralyze the nervous system. The known gases of this group do not produce the paralyzing effect except in a high degree of concentration. As Professor Mayer quite justly remarked, one should not believe that chemical substances employed in warfare have only one of the properties just enumerated. Vesicant compounds, for example, cause fatal lesions when they enter the lungs instead of reaching the skin. The effect designated when one speaks of a lacrimogenous or vesicant substance is only the predominant effect. A modification of the dose employed changes completely the character of the noxious effects. For example, dichlorethyl sulphid in a weak concentration causes merely a slight inflammation of the eyes and acts as a vesicatory if applied to the skin. A strong concentration, however, causes lesions of the eye that produce blindness, or lesions of the lung inciting a progressive obstruction of the air passages and ending in death. Through diverse noxious actions, combined effects may be produced, either because several substances are projected at the same time or because a single substance possesses several properties. In this connection, attention should be called to certain combined effects that characterize certain explosives and certain gases. Most modern explosives, at the moment of their deflagration, liberate highly toxic gases; for example, carbon monoxid.

Fortunately, methods of protecting the human organism against noxious substances have been developed at the same time that the use of such substances in warfare has been intensified. Protection has been accomplished through isolating apparatus and filtering devices. The isolating apparatus are more or less simple arrangements which protect a person from the exterior atmosphere and furnish him the oxygen that he needs. Theoretically, such apparatus would seem to constitute perfect protection, since it may be applied to all noxious substances and to all concentrations. But this apparatus discommodes combatants to such an extent that filtering devices are preferred. The latter remove from the inspired air all noxious products by interposing an appropriate filter before the entrances to the air passages. These filters are absorptive, porous bodies; dissolvent liquids; chemical reagents, or actual sieves. They have been found remarkably efficacious. However, if the concentrations of the noxious substances exceed certain limits, even the masks become ineffective. Moreover, it is essential that those who may need them should have them immediately at hand and should be trained in the use of them. Against a crowd taken unawares or untrained, or against the civilian population especially, the effect of a gas attack would be serious, if not disastrous.

BACTERIOLOGIC WARFARE

Contrary to warfare with chemical products, bacteriologic warfare has never been employed. Reasoning *a priori*, the effects of bacteriologic warfare, since it cannot be measured or localized, would, it would seem, affect also the civilian populations; spread over the frontiers, and possibly make its baneful influence felt after the cessation of hostilities. Nevertheless, Professors Pfeiffer, Bordet and Madsen hold the view that bacteriologic warfare would not prove to be very effective, by reason of the means of protection that would be available to counteract its effects. The use of typhus and cholera cultures to contaminate the water supplies would be combated by careful filtration, which is already employed in large centers, or by the treatment of river waters with chlorin. Any attempts to spread the plague among the enemy, by means of infected rats, would be as dangerous for the instigators as for the enemy, for the rats would pass back and forth from one front to the other. Experience proves, furthermore, that an epidemic of plague can be eradicated in a comparatively short time. The danger of an epidemic of typhus propagated by lice is much less than formerly. As for the use of poison in projectiles, experts have stated that micro-organisms which would most likely be employed (streptococcus, staphylococcus, anthrax spores, bacilli of glanders) would not remain active if prepared a long time in advance, especially when subjected to drying on metallic surfaces. If introduced within a projectile, the experts hold that the micro-organisms would not be able to resist the initial shock produced by the departure, the elevation of the temperature, and the concussion of the explosion. However, the dropping of glass containers filled with disease germs might be fraught with a certain amount of danger.

To sum up, the scientists consulted were of the opinion that our present knowledge of hygiene and bacteriology would be effective in preventing the extension of epidemics that might be incited among the combatants or among the civilian populations, and that epidemics so propagated could not exert a decisive influence on the outcome of hostilities.

Antituberculosis Vaccination of the New-Born

As was to be expected, the recent communication of Dr. Calmette on the attempts at immunization against tuberculosis, which I discussed in a previous letter (THE JOURNAL, Aug. 9, 1924, p. 453), awakened in a large number of physicians the desire to apply the method at once in their practice. In a recent letter addressed to the *Presse médicale*, Calmette wrote: "We do not know as yet whether the immunity that the method bestows is sufficiently lasting and permanent to protect, up to 3 years of age, infants born of tuberculous mothers, or who came into the world in a highly contaminated familial environment. Age 3 is mentioned because, at that age, it may be assumed that they have acquired a sufficient resistance to bacillary infections. Only time can establish the truth in regard to this point, and we must have the patience to wait two or three years until the statistics on the comparative mortality of children vaccinated and not vaccinated will allow us to draw conclusions."

Calmette holds, therefore, that it would be premature to introduce his method now into the current medical practice. However, the Pasteur Institute will furnish the vaccine to physicians who request it. But Calmette stresses again the necessity of using the vaccine exclusively during the first ten days after birth. Then, again, it should be borne in mind that this vaccine, being composed of a culture of living bacilli, cannot be kept more than ten days. It is, consequently, impossible to create stocks of the vaccine or to send it on in advance, to be used as occasion arises.

A Memorial to Prof. Yves Delage

At Roscoff, department of Finistère, a basrelief in honor of Dr. Yves Delage, professor of zoology at the Faculté des sciences in Paris, has been unveiled. For many years Delage was the director at Roscoff of the Laboratory of Experimental Zoology, an annex of the Sorbonne.

Unpleasant Scenes at the Examination for Internships

Regrettable incidents occurred recently in connection with the examination held to determine the selection of interns to serve in the hospitals of Paris. For the written test in internal pathology, the subject chosen was "Clinical Types of Epidemic (Lethargic) Encephalitis." A great many of the 600 candidates did not find this subject to their liking, and alleged that the question was not sufficiently elucidated to constitute the subject of a composition. They evidenced their dissatisfaction with the members of the board of examiners by loud and even violent manifestations, and it seems that they could find no better means of avenging themselves than by slashing and rendering useless the pneumatic tires of the automobiles in which the board members had driven to the scene of the disturbances. However, the test in external pathology, which dealt with cancer of the tongue, passed off quietly. The embarrassment experienced by numerous candidates when confronted with a question such as the one proposed in regard to the clinical types of epidemic encephalitis is quite characteristic, and reveals plainly the weakness of the system of competitive examinations and the method of preparing them, which consists frequently in the endless repetition of the same commonplace questions. As Prof. René Cruchet wittily and somewhat sarcastically remarks in the *Journal de médecine de Bordeaux*, when the topic "cancer of the tongue" was announced, every pen in the room went immediately into action, for it is one of the classical, commonplace questions found in the manuals and constantly recurring in the collections of questions asked at previous examinations for internships. Everybody knows it by heart. Not a second is required for meditation, and it can be predicted in advance that all the serious replies will be almost identical in content, so that it will be practically impossible to differentiate between them as to evidence of scholarship. It is the triumph of a good memory. But to expect students to write on the subject of encephalitis, or even its clinical types—this new disease that has been talked about incessantly for the last seven years and which all the medical journals and even the lay journals are constantly discussing—how atrocious!

Prizes for Articles on Tuberculosis

The Royal College of Physicians of London has bestowed on Dr. Albert Calmette, assistant director of the Pasteur Institute, the gold medal and the Weber-Parkes triennial prize for the best original article on tuberculosis.

The dean of the Faculté de médecine of Montpellier has been authorized to accept, in the name of the university, the bequest of 100,000 francs made to the institution by Monsieur J. F. L. Cabanes. This sum is to be used to establish a prize to be awarded the discoverer of a preventive or curative remedy recognized as efficacious for the treatment of tuberculosis. The interest on this sum is to be used every year for one or more prizes to encourage work in the same field.

BERLIN

(From Our Regular Correspondent)

Aug. 23, 1924.

Sterilization of Criminals, the Feebleminded and the Mentally Ill

In defense of the bill proposed by the government in the Saxon parliament, the following reasons for legislative action have been urged:

For eugenic and social reasons, measures for the prevention of the propagation of criminals, the feebleminded and the mentally ill are needed.

In addition to prohibitions against marriage, detention in an asylum, etc., sterilization by means of vasectomy and salpingectomy is the principal means of prevention. In contrast to castration, these do not change, as far as is known, the character of those operated on, either bodily or mentally. It does not deprive them of sexual desires or the possibility of normal sexual intercourse.

Sterilization is to be considered for the prevention of the spread of hereditary mental diseases, feeblemindedness and criminal tendencies; more particularly, in:

1. Patients who are suffering or have suffered from unequivocally demonstrated dementia praecox and are no longer cared for in institutions. A considerable percentage of their offspring are, as a rule, affected with dementia praecox or some other mental disease. Furthermore, investigators are agreed that, from such parents, in addition to those manifestly mentally ill, many of the offspring present psychopathic tendencies or are mentally subnormal.

2. Patients suffering unquestionably from manic-depressive insanity, with grave clinical manifestations. Manic-depressive insanity is undoubtedly a hereditary disease. The exact nature of the hereditary succession has not yet been determined, but from the examination of family histories it has been observed that the disease is of common occurrence among the descendants of manic-depressive patients.

3. Patients with a fully established diagnosis of epilepsy. Investigations to date indicate that epileptics transmit a disposition to epilepsy to a considerable percentage of their children and grandchildren; affect clans that heretofore were free from any disposition to epilepsy, and that, in addition, feebleminded, psychopathic and mentally ill individuals are found in considerable numbers among their posterity.

4. The degenerate type of alcoholics, with psychic manifestations. A portion of these belong to the previously mentioned pathologic types, while others have a disposition to some form of degeneracy, which constitutes the basis for their malady. In such subjects, alcohol acts as a hereditary taint and constitutes a grave menace to posterity.

5. A few constitutional psychopaths with marked degenerative tendencies. From wide experience and many collected statistics, it is apparent that psychopaths owe their condition, for the most part, to hereditary influences.

6. Patients with a clear diagnosis of congenital feeblemindedness. Researches in recent years have shown that heredity plays an important part in the genesis of congenital feeblemindedness. Sterilization appears here especially indicated, since the disease can be unequivocally diagnosed before the onset of puberty and the period of propagation.

7. Patients affected with the very rare but markedly hereditary disease termed Huntington's chorea or hereditary chorea. On an average, half of the children that spring from the union of a patient with hereditary chorea and a healthy mate are sufferers from the disease.

8. Patients with marked criminal tendencies (crime taken in the narrower sense); especially habitual criminals, perpetrators of heinous and violent crimes and gross offenses against morality. They are criminals mainly because of degenerative tendencies and not as the result of external conditions. Their disposition to crime bears a relation to some of the previously mentioned psychically abnormal mental conditions, such as epilepsy, hysteria, psychopathy, feeblemindedness and dementia praecox, and is often found in widely distributed families that are biopsychically and socially inferior. When they are eliminated as factors in the propagation of the human race, a practical campaign against crime is being waged which goes hand in hand with the crusade against degeneracy. Any endeavor to get a subject to accept sterilization voluntarily should first be approved by the medicolegal expert. In the case of criminals, in addition to voluntarily accepted sterilization, compulsory sterilization, to be regulated by law, is a live problem for the future. It would involve a modification of the penal code, and would come under the head of "protective measures."

Since the question of sterilization is an entirely new idea in the thinking and feeling of the nation, it is likely that, for the present, only voluntary sterilization can be introduced. In the case of the mentally ill and those with an hereditary inferiority, who have been given a legal guardian owing to their inability to manage their affairs, consent to the sterilization operation should be sought from such guardian.

Before sterilization in any form can become possible, the opposing laws and the existing administration of justice must be changed, and special legislation permitting sterilization under certain legal restrictions must be enacted.

A portion of the patients mentioned above will voluntarily accept sterilization. Their number may not thereby be appreciably diminished, nor the diseases with which they are affected eradicated; but many disasters and much unhappiness can be prevented. The public will gradually become convinced of the desirability of sterilization, and when later the subject of compulsory sterilization for those who will not voluntarily yield to it comes up, the public mind will have been prepared for its consideration.

Aside from the eugenic effect, favorable results from a social standpoint may be expected from the sterilization of abnormal persons and the mentally ill. They often find it difficult, if not impossible, to support themselves and their dependents. They are often compelled to accept public aid and, at times, are supported entirely from public funds. At the same time, they are usually unable to give their children a proper education, so that the latter are often allowed "to run wild," with resulting serious consequences for society. The more children they bring into the world, the greater become the distress and misery of the family. It will therefore be an important factor in the endeavors that are being made to prevent the financial overburdening of the people, neglect of juveniles, and wretchedness and suffering in families, if the opportunity is created of eliminating from the procreative function the groups enumerated above.

With reference to the question of legal right, the *Landesgesundheitsamt* proposes the insertion in the penal code for the German empire, dated May 15, 1871, of the following section (§ 224a) immediately after Section 224, Paragraph 17 (infliction of bodily injuries):

> A charge of infliction of bodily injury may not be brought against a physician who may have sterilized or rendered incapable of producing offspring a person who was suffering or had suffered from mental illness, or other mental disorder of similar gravity, or who had given evidence of grave criminal tendencies; provided, in the opinion of two officially recognized physicians, grave hereditary injuries would, in all probability, result for his offspring, if there should be such. The intervention must have been performed with the consent of the subject; or, in the case of minors, with the consent of their legal representative, and, in either event, with the approval of the court of ward. Only a psychiatrist and a physician versed in eugenics and race hygiene may serve as medicolegal experts in such a proceeding.

This bill has been approved by the Saxon ministry of the interior and the ministry of justice and has been referred for further action to the *Reichsjustizministerium* (the federal ministry of justice).

BUDAPEST

(From Our Regular Correspondent)

Aug. 15, 1924.

Infant Mortality

Of 1,000 deaths, 156 were of children under 1 year. In certain towns of Hungary, particularly in the low land, the proportion was much larger, reaching almost 50 per cent. Of 1,000 deaths of children under 1 year, 385 were attributed to gastro-enteritis, 147 to pulmonary affections, 171 to congenital debility, 23 to phthisis, 54 to contagious diseases, and the rest to other causes. According to the opinion of the supreme sanitary board, it would be easy to avoid a considerable number of those affections, and consequently to diminish in a large proportion the mortality of infants, if sanitary measures were enforced by the authorities, and if alimentary conditions could be improved. The board thought that it was to be regretted that hereditary syphilis did not appear in the statistics furnished as a cause of infant mortality. Without doubt, it remarked, syphilis, especially the syphilis of the father, was a powerful factor in the mortality. Of 100 births in well-to-do syphilitic families, from thirty-five to forty children succumb at the end of a few months. The mortality might be considerably reduced if antisyphilitic treatment was given to the mother during pregnancy.

Abdominal Wounds in the World War

The knowledge of the military surgeon has been vastly enlarged in various directions by the experiences of the war, notably in abdominal wounds. Dr. Pfann, in his recently published book, has given a number of interesting cases of recovery after perforation of abdominal viscera. In one case a soldier was shot through the stomach. He ran about a 1,000 meters before being taken to a hospital. He vomited half an hour after the injury, his last meal having been taken one hour before the injury. He vomited blood several times the same evening. He was put on an iced milk diet, and on the third day passed a quantity of clotted blood by rectum. On the tenth day his temperature was normal, and at the end of six weeks he was discharged from the hospital. The difficulty in dealing with wounds or possible wounds of the small intestine, according to Pfann, was in separating the class showing slight or moderately severe symptoms in which septic peritonitis was likely to supervene. Many remarkable recoveries were recorded, following for the most part treatment by opium, diet, rest, enemas and other simple, nonoperative measures. In one case a Russian (pointed) bullet entered at the left crest of the ileum and made its exit some-

what anteriorly to the posterior superior spine of the right ilium. There were absolutely no abdominal symptoms. Another soldier was shot through the urinary bladder. The bullet pierced only soft parts, and luckily no bones were touched by the bullet. For three days the soldier had voided bloody urine, and after two weeks he was dismissed from the hospital to a home for convalescents in a healthy condition. Wounds of the colon appear to have been fatal to the extent of 50 per cent. Of seven certain wounds of the smaller intestine, all the patients died, while of eight possible wounds of that viscus all recovered.

Poisoning by Potassium Chlorate

A case of death from an overdose of potassium chlorate is reported to have occurred in Szeged. The victim was a woman, aged 27, who had taken 40 gm. of the drug in three days for sore throat, when alarming symptoms supervened which resisted all attempts to save life. Potassium chlorate is very popular in Hungarian households, and is so largely resorted to by the public, which regards it as an inoffensive drug, that it is only by chance that poisonings do not occur more frequently. The medical officer of the city asked the editors of the lay journals to make the poisonous properties of potassium chlorate in large doses widely known.

Accident and Diabetes

In a lecture before the medical society, Professor Balint said that there was still a great want of clearness as to the connection between accidents and diabetes. Since Bernard's experiments, glycosuria had often been seen to come on after serious train injuries, but mostly transient and slight in degree. In some cases, however, the glycosuria continued a long time. In one case, a locomotive engineer, to whose train an accident had happened and who, in addition to being shaken, was accused of being the cause of it, had glycosuria for a year, along with a good deal of psychic disturbance. After an inquiry and acquittal, the sugar disappeared. Such cases, however, were rare. In the relative darkness that clung round the etiology of diabetes, accident might often be thought of as the cause, but could rarely be proved. Traumatic diabetes could not be described. Diabetes might also result from injury to the pancreas. Whatever the cause of diabetes may be, it is a very pleasing fact that we are in the possession of a remedy, insulin, which proved to be an exceedingly reliable and potent drug in the treatment of diabetes.

Marriages

WALTER GUERNSEY FREY, JR., Long Island City, N. Y., to Miss Josephine Meredith Whitehouse of New York, September 12.

HENRY PAGE MAUCK, Richmond, Va., to Miss Harriet Morrison Hutcheson of Rockbridge Baths, September 10.

GUY THOMAS MCCAULIFF to Mrs. Gladys Mauch-Hathway, both of Webster City, Iowa, September 2.

MARION HOWELL WATSON, Chatham, Va., to Miss Alma Anne Mays of Charlottesville, recently.

JOSEPH S. J. MANNING, JR., New York, to Miss Florence A. Reimann of Iron River, Mich., June 1.

LUCIUS GASTON GAGE to Miss Margaret Elizabeth White, both of Charlotte, N. C., August 16.

PAUL V. ANDERSON to Mrs. Alice Boatwright Anderson, both of Richmond, Va., August 23.

SELVIA OSCAR FRY, New York, to Miss Olga Flora Rummel of Madison, Wis., August 28.

AUBRY T. MUSSEN to Mrs. Virginia Hack Marburg, both of Baltimore, September 11.

MINOR CARSON LILE to Miss Elma Chapin Collins, both of Seattle, in August.

Deaths

Charles Elmer Sawyer, personal physician to the late President Harding, died suddenly of heart disease at his home in Marion, Ohio, September 23, aged 64. Dr. Sawyer was born in Nevada, Ohio, Jan. 24, 1860. He received his degree in medicine from the Homeopathic Hospital College in 1881, and began practice at once in La Rue, Ohio, establishing the Sawyer Sanatorium in 1890, which was removed to Marion in 1893. He had been for many years active in homeopathic education and policies, serving as president, and as a member of the executive committee of the American Institute of Homeopathy. When the United States entered the World War in 1917, he was appointed a member of the medical section of the Council of National Defense and aided Dr. Franklin Martin in the formation of the Volunteer Medical Service Corps, becoming its secretary. Following the war, he was commissioned brigadier general in the Medical Reserve Corps on March 12, 1921, and was called to active duty as physician to President Harding; following the death of President Harding, he was appointed physician to President Coolidge on Oct. 11, 1923. In June, 1924, he announced his retirement as physician to the White House, stating that he would devote himself to the upbuilding of the Harding Memorial Association. His life was marked by intense personal devotion to the President, whom he loved, and to the medical organizations which he served.

Jefferson Davis Griffith ✠ Kansas City, Mo.; Medical Department of the University of the City of New York, 1871; professor of surgery at the Kansas City (Mo.) Medical College, 1890-1905, and dean, 1893-1898, and later professor of clinical surgery at the University of Kansas School of Medicine, Rosedale; member of the American Orthopedic and Western Surgical associations; past president of the Jackson County Medical Society, the American Public Health Association, the Missouri State Medical Association, and the Medical Association of the Southwest; Spanish-American War veteran, on the staffs of the Kansas City General Hospital for thirty years, and of St. Joseph's Hospital for forty-nine years, where he died, August 29, aged 74.

William Frederick Kuhn ✠ Kansas City, Mo.; Jefferson Medical College of Philadelphia, 1844; member of the American Psychiatric Association; adjunct professor of psychiatry at the University of Kansas School of Medicine, Rosedale, since 1904; president of the Kansas City College of Pharmacy, 1900-1905; formerly superintendent of the State Asylum, No. 4, Farmington, and the State Hospital, No. 2, St. Joseph; aged 75; was found dead in bed, September 2, of cerebral hemorrhage.

Robert Hyndman Mullin, Vancouver, B. C., Canada; University of Toronto Faculty of Medicine, Toronto, Ont., 1902; formerly assistant professor of pathology and bacteriology and associate professor of public health at the University of Minnesota Medical School, Minneapolis, and director of the state hygienic laboratory, University of Nevada, Reno; at one time on the staff of the Vancouver General Hospital; aged 47; died suddenly, August 29, at Victoria.

Frank Adams Glasgow ✠ St. Louis; St. Louis Medical College, 1878; formerly professor of clinical gynecology at the Medical Department of Washington University, St. Louis; member of the St. Louis Surgical Society; at one time on the staff of St. Louis Mullanphy Hospital; aged 70; died, August 22.

Peter James Kline ✠ Portsmouth, Ohio; Miami Medical College, Cincinnati, 1871; Bellevue Hospital Medical College, New York, 1874; Civil War veteran; for ten years member of the board of education, and for four years member of the board of health; aged 84; died, August 31.

William Sanborn King ✠ Ashtabula, Ohio; Western Reserve University School of Medicine, Cleveland, 1887; formerly member of the state legislature; for fifteen years member of the school board, and for many years bank president; aged 64; died, July 18, of diabetes mellitus.

Charles Holdsworth Barlow, Portsmouth, Va.; University of Virginia Department of Medicine, Charlottesville, 1900; member of the Medical Society of Virginia; on the staff of the Parrish Memorial Hospital; aged 47; died, July 21, of cerebral hemorrhage.

Franklin A. Bushey, Greencastle, Pa.; University of Maryland School of Medicine, Baltimore, 1861; member of the Medical Society of the State of Pennsylvania; Civil War veteran; aged 83; died suddenly, June 26, of heart disease.

Frank Clark Galehouse, Santa Rosa, Calif.; College of Physicians and Surgeons of San Francisco, 1902; served in the M. C., U. S. Army, during the World War; aged 52; died, July 29, at Long Beach, of cirrhosis of the liver.

Charles Edwin Cord ✠ Chicago Heights, Ill.; Rush Medical College, Chicago, 1900; aged 62; was killed, September 12, when he jumped from the fifth floor of the Presbyterian Hospital, Chicago, while suffering from diabetes.

Martin V. McKinney, Charleston, Ind.; Kentucky School of Medicine, Louisville, 1866; University of Louisville (Ky.) School of Medicine, 1871; also a lawyer and pharmacist; aged 85; died, August 16, of toxemia.

Charles Davis Fenelon ✠ Phillips, Wis.; Rush Medical College, Chicago, 1891; also a druggist; formerly mayor of Phillips and member of the board of education; aged 61; died, September 4.

John Arthur Greenlaw, Palmerston, Ont., Canada; University of Toronto Faculty of Medicine, Toronto, 1889; Victoria University Medical Department, Toronto, 1889; aged 59; died, July 31.

Clayton Herman Bokhof, Dixon, Ill.; Northwestern University Medical School, Chicago, 1899; aged 51; died, September 3, at the Dixon Public Hospital, of peritonitis and pneumonia.

Theodore Delos Rupert, Geneva, N. Y.; Medical Department of Columbia College, New York, 1880; member of the Medical Society of the State of New York; aged 69; died, August 29.

James B. White ✠ Belleplaine, Minn.; University of Minnesota Medical School, Minneapolis, 1891; aged 60; died, August 30, at the Miller Hospital, St. Paul, following a long illness.

William T. Mathews, Greenwood, Miss.; Memphis (Tenn.) Hospital Medical College, 1897; member of the Mississippi State Medical Association; died, August 22, of heart disease.

John C. Wilson, Valdosta, Ga.; Southern Medical College, Atlanta, 1897; member of the Medical Association of Georgia; aged 52; died suddenly, August 30, following a long illness.

James E. Mulligan, Cleveland; Eclectic Medical Institute, Cincinnati, 1888; Medico-Chirurgical College of Philadelphia, 1905; aged 64; died, June 26, at his home in Lakewood.

Jefferson Charles Anderson, New York; New York Homeopathic Medical College and Hospital, 1899; aged 56; died, August 10, of cerebral hemorrhage and pneumonia.

Samuel Gus Nordstrum ✠ Los Angeles; Eclectic Medical Institute, Cincinnati, 1888; member of the Iowa State Medical Society; aged 65; was killed, August 27.

Robert Hamilton Nelson, Hudson, Mich.; Detroit Medical College, 1876; aged 71; died, August 30, at the Harper Hospital, Detroit, following an operation.

James Henry Brewster ✠ Prairie Grove, Ark.; Missouri Medical College, St. Louis, 1887; aged 63; died, August 29, at the Fayette City (Ark.) Hospital.

Otto Theodor Schulze ✠ Napa, Calif.; University of California Medical School, San Francisco, 1907; aged 42; died, August 18, of angina pectoris.

Leverge Knapp, Trout Creek, N. Y.; University of Michigan Medical School, Ann Arbor, 1894; aged 64; died, August 31, following a long illness.

Henry F. Walter, San Francisco; Cooper Medical College, San Francisco, 1895; aged 68; died, June 23, at the Lane Hospital, of duodenal ulcer.

Newell Jonathan Brown, Sr., Bakersfield, Calif.; Dartmouth Medical School, Hanover, N. H., 1876; aged 70; died, July 20, at Hot Springs, Calif.

George Cary Laney, Hartsfield, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1900; aged 65; died, August 27, at Moultrie.

Charles William Ervin, Port Huron, Mich.; Rush Medical College, Chicago, 1904; aged 47; died, July 15, at Los Angeles, of chronic nephritis.

Ennis W. Kincheloe, Glenns Ferry, Idaho; Missouri Medical College, St. Louis, 1888; aged 68; died, August 30, of pernicious anemia.

Alva C. Cantrell, Thayer, Mo.; St. Louis College of Physicians and Surgeons, 1905; aged 45; was accidentally shot and killed, July 19.

Margaret A. Vorbeck, St. Louis; American Medical College, St. Louis, 1892; aged 63; died, August 28, following a long illness.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

ASTHMA-TABS

A "Famous New Discovery" of Old, Long-Used and Dangerous Drugs

The "Asthma-Tabs Laboratories" of Kansas City, Mo., conducts a piece of mail-order quackery in the sale of an alleged cure for asthma known as "Asthma-Tabs." Established in 1922 as a partnership, in February, 1924, the business was incorporated by the former partners. The individuals making up the concern are T. N. Roby, said to be connected with the Roby Printing Company of Kansas City, Mo.; A. W. Slattery, who, it seems, is advertising manager for a concern that sells women's apparel; C. W. Sydenstricker, a contractor and builder, and F. W. Osborne, who appears to act as general manager and is said to have been employed previously as a chemist. The Kansas City telephone directory for 1924 does not contain the name of the Asthma-Tabs Laboratories. It is significant, however, that the address of the Asthma-Tabs Laboratories is the same as that of the Roby Printing Company.

Much of the Asthma-Tabs newspaper and magazine advertising directs the public to write to R. N. Townley; in fact the idea is conveyed that Asthma-Tabs are the discovery of this person—if Townley is a person. All of the circular letters that form the stock in trade of the Asthma-Tabs concern are signed "R. N. Townley, president." We find no person of this name in the Kansas City telephone directory.

Part of the Asthma-Tabs "come-on" advertising consists of the reproduction of a letter purporting to be on the stationery of the Peoples Trust Company of Kansas City and to be written by the vice president of that bank, one R. Pryor Combs. Mr. Combs states that he is personally acquainted with the "individuals interested in the Asthma-Tabs Laboratories" and he believes "that any representations they may make will be fulfilled in an entirely satisfactory manner." Evidently finance as well as politics makes strange bedfellows and again it is demonstrated that quackery may secure the endorsement and sail under the respectable auspices of presumably responsible banking institutions—provided such quackery is profitable. "My son, make money; honestly if you can, but make money."

The point of contact between quack and victim is, as usual, the venal or careless newspaper or magazine which sells its advertising space to herald such lies as these:

"Kills Hay Fever and Asthma Germs in Three Days."
"Famous New Discovery, Asthma-Tabs, Succeeds After Everything Else Had Failed."
"If you are short of breath, sneeze, wheeze, can't sleep at night—this wonderful new discovery will remove these troubles in a few days."

THE TRIAL TREATMENT

In keeping with the traditions of the dispenser of nostrums through the mails, there is the orthodox "free trial treatment." Thus: "To prove that Asthma-Tabs will absolutely rid you of Asthma and Hay Fever . . . I will send you a regular $1 treatment of my famous home remedy absolutely free and postpaid." The rest of the advertising paraphernalia also runs true to form. Those who answer the advertisement and apply for the "trial treatment" receive the first of a series of "follow-up" letters, all signed "R. N. Townley," together with some other pieces of advertising and a small package of "Asthma-Tabs" containing 15 tablets.

One of the accompanying pieces of advertising is a booklet entitled: "How Science has Conquered Asthma and Hay Fever" which purports to give the history of the epoch-making "discovery" of Asthma-Tabs. According to the booklet the author suffered from asthma and hay fever for twelve years. He tried "dozens of remedies and several physicians" without avail. Finally he went to a physician who

"had made a special study of Asthma and Hay Fever" and the doctor took him into his confidence and told him "he had been working for years on an entirely new constitutional remedy for Asthma and Hay Fever" but had not yet perfected it as he "lacked adequate laboratory facilities." After two more years of "heart-breaking discouragements" and disappointments the goal was reached! The remedy is said to have been first tried on the author of the booklet: "the result was almost instantaneous"; within a month "every trace of asthma had vanished never to return!"

KILLS ASTHMA AND HAY FEVER GERMS IN THREE DAYS

Famous New Discovery Asthma-Tabs, Succeeds After Everything Else Had Failed—Used by Thousands

To prove that Asthma-Tabs will absolutely rid you of Asthma and Hay Fever, and that terrible sneezing, wheezing and shortness of breath, I will send you a regular $1.00 treatment of my famous home remedy absolutely FREE. This wonderful prescription will rid you of these troubles in a few days.

Mrs. C. H. Lee, Hoburg, Mo., says, "One month ago today my daughter took the first dose of Asthma-Tabs. She had a light attack the third day, but has not had any since. May God's blessing rest on the discoverer of such a boon to humanity."

No matter whether your case is of long standing or recent development, no matter what your age or occupation, if you are troubled with any form of Asthma or Hay Fever, I want to show you at my expense that Asthma-Tabs will rid you entirely of this terrible suffering in a few days. It has cured countless sufferers where everything else has failed.

Simply send your name and address today and get the home treatment I want to send you FREE and postpaid. Write today to

R. N. TOWNLEY

Asthma-Tab Laboratories

Typical advertising of Asthma-Tabs. In this way the quack and his victim are brought together and the quack splits his profit with the newspaper.

Then follows the scare stuff typical of the mail-order quack: The alleged helplessness of the medical profession; the claim that physicians simply experiment on the sufferer; the fearsome picture of the results of neglect and the statement that "tuberculosis, organic heart disease and other dangerous diseases may develop at any moment." Finally, the suggestion that now is the time to send for the "Full 30 Day Treatment only $5.00." Should the prospective victim not bite, the second letter of the follow-up series comes in about a week. In this "Townley" says that he is "vitally interested in the *success* of every trial treatment," which is doubtless true if by success he means getting five dollars for a few cents' worth of pills. The entire letter is an urgent request that the victim send in for the "full 30 day treatment."

THE SLIDING SCALE OF PRICES

Should follow-up No. 2 fail to land a sale, follow-up No. 3 comes in due time. This begins the inevitable cut in price that every mail-order quack makes as part of the bait. A "special individual offer good for 10 days only"—which of course is made to all prospective victims who do not bite on the first two letters—suggests that if the slip which accompanies this letter is filled out and mailed in the self-addressed envelope also accompanying it, the full 30 day treatment will be sent and the purchaser can "just pay the postman $3.95 to be held as a deposit while you are trying the treatment." Says the letter: "My friend, please consider this as a personal offer, to you alone. . . . I seldom make such an offer. . . ." The "personal offer" is a printed form-letter in imitation typewriting, doubtless ordered by the thousand!

Follow-up No. 4 cuts the price to $3.00. These "easy terms" are made because "when you are entirely well . . . you will be a booster for Asthma-Tabs"; and: "Remember you take no risk. A big Kansas City bank says we are thoroughly reliable." Are you still backward about ordering? Then comes follow-up No. 5: "I am going to give you $2.50 today and enclose my check for that amount." This is the quack's way of saying that he has cut the price on Asthma-Tabs, except that he doesn't call it price cutting. In fact he denies that it is a price cutting:

"I can't cut the price on Asthma-Tabs—it costs too much—but I do recognize the value of friends . . . so I'm going down into my pocket for $2.50 to help you. Our cashier will accept this check in payment on a complete full-size $5.00 Asthma-Tabs treatment, and will simply charge it to my account."

If this still fails to bring an order the price is finally reduced to $1.00. A beautiful line of buncombe—typical of the business. Because of the number of inquiries received about the nostrum and the report that toxic effects had followed its use original specimens of Asthma-Tabs were secured and turned over to the A. M. A. Chemical Laboratory for analysis. The laboratory report follows:

LABORATORY REPORT

"Two original bottles of 'Asthma Tabs' (Asthma Tab Laboratories, Kansas City, Mo.), were submitted to the American Medical Association Chemical Laboratory for examination. The weight of the tablet approximated one-half gram each. Qualitative tests indicated the presence of potassium, sulphate, iodid, arsenic (in trivalent form) and a trace of iron. No other substances were found.

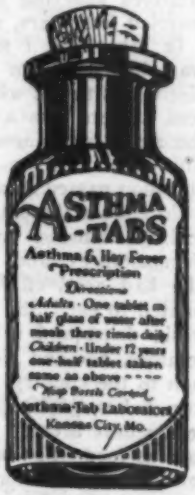
The following quantitative determinations were made:

Moisture (loss on drying at 100 C.)	0.0	per cent.
Potassium (K^+)	29.69	per cent.
Iodid (I^-)	53.42	per cent.
Sulphate (SO_4^{--})	16.90	per cent.
Arsenic (as As_2O_3)	0.103	per cent.

"From the foregoing, 'Asthma Tabs' may be considered to consist essentially of potassium iodid 70 per cent., potassium sulphate 29.9 per cent. and arsenic trioxid 0.1 per cent. From this it may be said that each 'Asthma-Tab' contains the equivalent of:

Potassium iodid	0.35 Gm.	(about 5½ grains)
Potassium sulphate	0.15 Gm.	(about 2½ grains)
Arsenic trioxid (Arseni trioxidum, U. S. P.)	0.0005 Gm.	(about 1/120 grain)

"The adult dose recommended on the label is three tablets a day. This is equivalent to 1.05 gm. (16.2 grains) of potassium iodid, 0.45 gm. (6.9 grains) of potassium sulphate and 0.0015 gm. (1/40 grain) arsenic trioxid (*arseni trioxidum*, U. S. P.) daily."



And this is the "Famous New Discovery" that "Kills Asthma and Hay Fever Germs in Three days," that "contains no harmful drugs"—arsenic trioxid and potassium iodid, two drugs that have been used for generations in the treatment of asthma and two drugs that may easily be both harmful and dangerous when used without care or in ignorance of their presence. Is there any line of human activity in which dishonesty, chicanery and an utter disregard for the homely virtues of truthfulness and fair-dealing and even for human life itself is so rampant as it is in the "patent medicine" business? If there is, we do not know of it.

Heart Disease.—The tendency to excessive diagnosis of heart disease was rife in the war, when thousands of men were rejected as unfit for service or were invalided out of the army on the slenderest evidence of valvular disease and a mistaken notion of the ambit of cardiac manifestations. The morale of many ex-service men has been damaged to such an extent by this wrong diagnosis of heart disease that they will never again consider themselves fit to work. The same process of indiscriminate diagnosis of cardiac disease prevails in civil practice; or if the term disease is felt to be too strong or unpalatable to the patient, in its place is substituted a cryptic phrase familiar to us as a "weak heart" or a "strained heart." Whenever we use the term "heart disease" it should imply something which will either shorten the life of our patient or restrict his activities. It might seem out of place for me to remind you that an exact diagnosis only will permit us to give the complete prognosis, and that it is a point of honor with the medical profession not to cause needless alarm in giving judgment.—Parkinson, John: Diagnosis of a Healthy Heart, Lancet **2**:481 (Sept. 6) 1924.

Correspondence

PELLAGRA IN LEPROSY

To the Editor:—In Queries and Minor Notes (THE JOURNAL, August 9) Dr. Wilson of Kwangju, Chosen, Korea, describes a disease in lepers which he believes indicative of pellagra. In a paper read at the ninth annual meeting of the American Society of Tropical Medicine, at Atlantic City, June 3, 1912, I reported a case of pellagra in Hawaii, in a woman who at the time was or soon after became a leper. Some months later she was examined by Dr. G. W. McCoy, director of the Hygienic Laboratory at Washington, who pronounced her a leper.

He was aware of the diagnosis I had made which, owing to the general acceptance of the "maize theory" of causation, and the fact that there had never been a known case of pellagra in Hawaii, made my diagnosis seem doubtful.

The following is my clinical report:

Mrs. K., aged 26, Polynesian, a housekeeper and wife, was born in Hawaii. Her father, three-quarters Caucasian and one-quarter Hawaiian, was born here and died a year ago of typhoid fever at the of 50. Her mother, pure Hawaiian, died at the age of 40, during parturition. The only other members of the family were two sisters, who were in good health. Her husband also was healthy. An only brother was taken to Molokai as a leper. The patient knew of no other relatives suffering from cutaneous diseases. She had been married five years, and had no children or miscarriages.

In July, 1910, I was called to see her at her home. She was suffering from severe abdominal pains, with dysenteric discharges tinged with blood. The tongue was red, the breath, foul. There was a slight erythema over the forehead and the malar prominences, and over the backs of both hands. This was hardly a dermatitis; it disappeared on pressure, and soon passed away. The diarrhea stopped after treatment. I did not see the patient afterward, and do not know whether scaling occurred or not. She lived in fairly comfortable circumstances, and as hygienically as others of her class. She had good clothes, was well housed, and had all she wanted to eat. She had lived like other Hawaiians, on fish, fresh, dried and salted; fresh and dried beef, taro, sweet potatoes, poi and rice, with the fruits and vegetables common to the country. She had never used cereals, corn meal, corn flakes, germea or oatmeal. The only bread eaten had been wheat bread. She did not know that corn starch was used as food. She has never taken brandy or corn syrup, nor had she used cottonseed oil in any form. She never ate bacon or other fats, except occasionally fresh pork at a feast.

During the summer of 1910 the patient felt fairly well, but in November of that year she had considerable gastro-intestinal trouble, burning pain at the pit of the stomach, and pyrosis, which she attributed to "indigestion." The bowels were constipated as a rule, but occasionally there were attacks of diarrhea, although no change had been made in the diet.

During the second summer, the symptoms did not abate. The tongue was somewhat furred, and sometimes red; there were flying pains in the head, and specks before the eyes; she couldn't think straight; her memory seemed to be weaker; there was loss of appetite, some fever, great thirst, and ringing in the ears till the patient was confused and dizzy. About this time epileptiform attacks began to develop, and these continued at more or less frequent intervals.

In September, 1911, there was an eruption over the back of the hands, forearms, malar prominences, neck, feet and legs. It itched and burned at first. The skin grew flabby; insomnia followed, with severe cramps in the toes and legs. Often the patient was chilly, even when it was not cold, and sometimes there were night sweats. She grew excited over small things; was melancholy, and wept a great deal, feeling herself grow weaker every day.

In October, while I was in California, the patient decided to go to Honolulu to see a physician. Dr. Straub took charge of the patient for a few months, and returned her to Hawaii. Her condition was diagnosed as "spastic paraplegia with erythematosis." At this time a dermatitis covered the back of the hands, over the left elbow, feet, legs, cheek and forehead. There was edema, subsequent exfoliation, and then pigmentation of the affected areas, more pronounced on the hands, feet and legs than elsewhere. On arrival in Honolulu she went to a sanatorium, but grew rapidly worse, and after two months' absence, returned home.

Examination now showed the patient to be greatly emaciated and anemic. There was leukocytosis. The pulse was 75, rather weak and compressible. The temperature was normal. The tongue was reddened. The heart, lungs, liver and spleen were apparently normal. The facial expression was anxious, with a woe-begone look. The pupils were moderately dilated, and reacted to light and unaccommodation. The patellar and Babinski reflexes were abolished; ankle clonus as well. The skin reflexes were normal, with no discoverable sensory disturbances except in numbness of the feet and legs. The spinal region was tender to pressure. The extensor muscles of the arms, hands, feet and legs were much atrophied, with spastic paraplegia of about two months' standing. She had not left her bed since returning in December. While being questioned, she burst into tears. She would answer a question, and then a few minutes after modify or recall it. On attempting to walk, the patient exhibited characteristic spastic gait, with rigidity of legs, but no incoordinate or choreic movements. The skin showed deep pigmentation over the back of the hands, somewhat over the forearms and left elbow, a patch on the neck—"neck band"—also on the feet and legs where extensive foliation was going on, the skin coming off in large, black flakes. The nails were brittle and fissured; the insides of the fingers, reddened and cracked. Patches of pigmentation were present in spots on the back and buttocks, resembling somewhat certain of the syphilids or skin changes in leprosy. Possibly these chloasmic spots might be due to exposure in the sun, as the patient often went in the sea naked. The skin over the arms and legs was somewhat purplish, loose and flabby. The glands were normal. There was no ptosis.

I did not see the patient early enough to get the increased tendon reflexes, as they were undoubtedly present before the extensive changes in the posterolateral columns had taken place. The normal skin reflexes were an indication of undisturbed sensory tracts. The patient's tactile sense was good; also her sense of cold and heat; it was rather hyperesthetic, if anything. The urine was slightly acid, with a specific gravity of 1.010; it contained no albumin, no sugar, mucin and increased phosphates.

E. S. GOODHUE, M.D., Kaunakakai, Molokai, Hawaii.

A SUBSTITUTE FOR "DR."

To the Editor:—Numerous citizens have taken on themselves the care of the health of the individual and the family, and have appropriated the title of "doctor." Types of "doctors" have multiplied beyond the telling. Self-styled "doctors" of chiropody; "doctors" of chiropractic; "doctors" of health; even "doctors" of laboratory health, not to speak of the "doctors" of the seventy cults recently listed by one health board. As long as such "doctors" do not actually use the knife or prescribe through ordinary druggists, they are safe. Let diphtheria rage through the community; let the enlarged breast be rich in cancer and not in fat; let the malalinement of the vertebrae be tuberculosis, what matter? The drugless healers must go on!

At whose threshold should all this be laid? Recently in our state, an attempt was made to register physicians annually (at a fee, of course) and then to have the machinery set up to investigate unlicensed and illegal practitioners. It was not possible to get the doctors to agree on the utility of this legislation. It seemed that it was penalizing the innocent to reach into the maelstrom of the guilty. The physician is already burdened by fees and taxes. He pays for his medical

student certificate with which he enters medical school. He pays for the privilege of taking and passing the examinations licensing him to practice medicine and surgery; he pays to register in the county in which he practices; he pays for the privilege of prescribing narcotics to patients in pain (for a while he paid both a state and a federal tax). The physician is numbered to prescribe alcohol and to purchase it for office use, although how and why no fee was attached to this nuisance is not understood. So perhaps it is no wonder that it was not possible to get physicians to agree on giving themselves another tax, another set of papers to fill out annually, and another number to add to the growing list each of us has.

It occurred to me that honest doctors can change many things without more laws and more numbers. Suppose we agree that instead of a door plate or window sign which reads Dr. Jones or, as some will have it, J. Jones, M.D., we have our signs read:

JOHN JONES, M.D.
Licensed to practice medicine and surgery in this state

If all who may honestly do so take this means of informing the world at large that the provisions of the state law of their community have been satisfied, it will put the outcast where he deserves to be: outside the pale. The objections to making public one's privilege legally to carry on the profession of physician and surgeon cannot be strong. No physician objects to having his narcotic license number printed on his prescription blank. No physician can object to having his license and county certificate in his office consulting room, although the old style of having them framed there has passed with the overstuffed furniture. Putting oneself on record makes the illegal practitioner either quit or perjure himself.

The protection once afforded by the title of "doctor" to the health seeker has become a spider web. Let us take the matter up; let us be honest; even if it entails a larger placard over our door bell, or two lines instead of one on our letter head, and office card.

HERMAN GOODMAN, M.D., New York.

"STANDARDS OF OPHTHALMOLOGY"

To the Editor:—I have read in THE JOURNAL of July 26 the article on "Standards of Ophthalmology," by Dr. George S. Derby of Boston. I am prompted to reply to this because of the statement made in that article as follows: "The retail profit on glasses is large (100 per cent. seems to be a fairly good estimate." This statement, I hold, is unfair, misleading and harmful. Harmful because such things are read by many outside the profession, and because of the wide circulation and authoritative status of THE JOURNAL.

Our firm is classed, I believe, and perhaps properly so, as one of the leading dispensing houses of the country, and the leading one west of the Alleghanies. We confess to having had at least a fair degree of financial success, and after many years, from a modest start by the writer, now are doing what might be considered rather a large business of its kind, employing 100 people. Our prices are not higher than those prevailing in all large centers. We do no so-called "wholesale business." We do not now, nor never have paid commissions, percentages or rebates of any kind whatever to oculists or others, and we do but little clinic work at reduced prices. And yet, the net profits of our sales over a long period of years have not averaged in excess of 10 per cent., and in the year 1923, our net profit was less than 5 per cent.

We have no quarrel with oculists who sell spectacles; they get as much for their spectacles as we do, or more. Thus, in that respect, at least, they are fair competitors. They have the same inalienable right to sell merchandise that we have, if they choose to do so. That must be a matter of their own choice. The oculist thinks, of course, that he is making a profit, and he is provided that, and only if, he has little or nothing else to do. If he should add to the cost of his merchandise the time put in taking measurements, getting the glasses, and doing a lot of free adjusting for the next one to ten years, or during the life of the glasses, at one-quarter the rate he charges for his professional services, he then would lose money and lots of it. And if he tells the truth, he must admit it. The "wholesaler" who sells direct to the customer can split his profit with the oculist because of the cheaper and totally inadequate service that he renders.

Most oculists, we believe, think rather too much about the seeming and supposed huge profits of the dispenser, but I assure you these huge profits do not exist, and are not to be found at the end of the year. I cannot conceive of there being any substantial and general reduction in the price of good glasses, with the necessary fulness of service, now or soon.

Dr. Derby's article, I repeat, tends to create a wrong impression in the minds of those who read it, and we shall hope that these few frank and incontrovertible statements of fact, bearing on our side of the question, may be given equal publicity.

ALMER COE, Chicago.

THE STATUS OF DR. STONE

To the Editor:—My attention has just been called to some of the statements made by Dr. Lee Alexander Stone in his publication *Physical Culture;* particular attention being invited to the statement on page 57 of the July issue, that Dr. Stone, the author of the article in question, is a surgeon in the United States Army, with the rank of lieutenant colonel, and is consequently in a position to speak with authority and intelligence.

Dr. Stone was a captain in the temporary forces from August, 1917, to December, 1918, when he was discharged with the grade of captain. He did not reenter the medical service, and so far as the Medical Department is concerned, has had no connection with it since his discharge.

M. W. IRELAND, M.D., Washington, D. C.
Major General, the Surgeon General, U. S. Army.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

GUAISODIDE

To the Editor:—Please send me a report of the committee on the intravenous use of Guaisodide in tuberculosis, asthma, pneumonia, etc. This preparation is made by George A. Breon & Co., Kansas City.

J. A. WIGLEY, M.D., Mulberry, Kan.

ANSWER.—No report on Guaisodide of George A. Breon & Co. has been published by the Council on Pharmacy and Chemistry, and no product of the firm has been accepted for New and Nonofficial Remedies.

Many of the preparations of the Breon Company are intravenous specialities, marketed under nondescriptive proprietary names. Some of these bear a strong resemblance to intravenous specialties that have been the subject of adverse reports by the Council on Pharmacy and Chemistry. Thus, Guaisodide is similar in composition and claims to Venodine, which was reported on adversely by the Council (THE JOURNAL, June 26, 1915, p. 2155). Like Venodine, Guaisodide is stated to be a solution containing sodium iodid, guaiacol and creosote.

The report of the Council brings out that, since iodids are easily absorbed from the mucous membrane of the gastrointestinal tract and are usually well tolerated by the stomach, there is no reason for resorting to intravenous injection in their administration; further, the Council pointed out that the indiscriminate administration of iodids for pulmonary

tuberculosis is strongly to be condemned. The Council holds that there is no evidence to warrant the intravenous administration of guaiacol or creosote. The combination of two such similar substances as creosote and guaiacol (the second a constituent of the first) is irrational, in that it adds mystery to the preparation without increasing its value.

SODIUM MORRHUATE IN TUBERCULOSIS

To the Editor:—I am interested in the salt treatment for tuberculosis discussed by Sir Leonard Rogers at the International Conference on Tropical Diseases held recently at Kingston, Jamaica. Please give your opinion of the treatment.

C. B. MCKINNON, M.D., DeFuniak Springs, Fla.

ANSWER.—Following are references to articles by Sir Leonard Rogers and others on the treatment of tuberculosis with sodium morrhuate:

Rogers, Leonard: Researches on Leprosy and Their Bearing on Treatment of Tuberculosis: Use of Chaulmoogrates and Morrhuates in Treatment of Tuberculosis, *Lancet* **1**: 1297 (June 28) 1924.

Rogers, L.: Leprosy Problem and Its Bearing on Tuberculosis, *Bristol Med. Chir. J.* **41**: 19-24 (Jan.) 1924.

Rogers, Leonard: Recent Leprosy Research and Its Bearing on Tuberculosis Problem, *Glasgow M. J.* **101**: 109 (March) 1924.

Rogers, Leonard: "Defatting" of Acid-Fast Bacilli of Leprosy and Tubercle by Injections of Chaulmoogrates and Morrhuates, *Brit. M. J.* **2**: 11 (July 7) 1923.

Rogers, Leonard: Dr. Boelke's Method of Using Sodium Morrhuate in Tuberculosis, *Brit. M. J.* **2**: 1253 (Dec. 29) 1923.

Boelke, P. W. R.: Treatment of Tuberculous Diseases: Efficiency of Sodium Morrhuate Injections Compared with Other Treatments, *Brit. M. J.* **2**: 1249-1253 (Dec. 29) 1923.

Rogers, Leonard: Application to Tuberculosis of Successful Treatment of Leprosy by Soluble Preparations of Chaulmoogra, Cod Liver and Other Oils, *Brit. J. Tuberc.* **16**: 110-115 (July) 1922.

Davies, C.: Value of Sodium Morrhuate and Sodium Linate in Tuberculosis and Leprosy, *Indian M. Gaz.* **56**: 283 (Aug.) 1921.

Rogers, Leonard; and others: Sodium Morrhuate in Treatment of Tuberculosis, *Indian J. M. Res.* (special number), 1919, p. 236.

Tambe, G. R.: Sodium Morrhuate in Treatment of Tuberculosis, *Tubercle* **2**: 58 (Nov.) 1920.

Biesenthal, M.: Sodium Morrhuate in Treatment of Tuberculosis, *Am. Rev. Tuberc.* **4**: 781 (Dec.) 1920.

Ganguli, P.: Sodium Morrhuate in Treatment of Tuberculosis, *Indian M. Gaz.* **55**: 131 (April) 1920.

Rogers, Leonard: Sodium Morrhuate in Tuberculosis, *Brit. M. J.* **1**: 147 (Feb. 8) 1919.

Voegtlin, Carl; Smith, M. I., and Johnson, J. M.: Therapeutic Value of Chaulmoogra Oil and Its Derivatives in Experimental Tuberculosis, THE JOURNAL, Sept. 24, 1921, p. 1017.

Rogers, Leonard: Successful Treatment of Leprosy by Injections of Soluble Preparations of the Fatty Acids of Chaulmoogra and Other Oils, and Its Bearing on the Tuberculosis Problem, *Practitioner* **107**: 77 (Aug.) 1921.

Apparently, the newspaper items now appearing on the subject are based on an interview which Rogers gave to the press while attending the recent congress on tropical medicine in Jamaica. He did not at that time read any manuscript specifically on this subject.

MUSIC AS A SEDATIVE

To the Editor:—Can you advise me in reference to the use of music in hospitals or operating rooms while operations are being performed? That is, where can I get literature in reference to music being used for sedative effect in asylums and institutions for the feebleminded?

EDWIN A. TUPTS, M.D., Arkansas City, Kan.

ANSWER.—The following are references to the literature on the use of music for its sedative effect:

Gatewood, E. L.: Psychology of Music in Relation to Anesthesia, *Am. J. Surg.* (Anesthesia Supp.) **35**: 47 (April) 1921.

Mott, F.: Influence of Song on Mind and Body, *J. Ment. Sc.* **67**: 162 (April) 1921.

Kane, E. O.: The Phonograph in the Operating Room, THE JOURNAL, June 6, 1914, p. 1829.

Mendelson, R. W.: Operating-Room Slumber Songs, THE JOURNAL, July 4, 1914, p. 50.

Lawrence, R. M.: Healing Influence of Music, in Primitive Psychotherapy, Boston, Houghton Mifflin Company, 1910, pp. 172-200.

Olker, P. V.: The Influence of Music in Hospitals, *Bull. Iowa Inst.*, Des Moines **2**: 70, 1900.

Macomber, Esther: The Value of Music as Occupational Therapy, *Arch. Occupational Therapy* **3**: 125 (April) 1924.

Van de Wall, W.: Music in a General Hospital, *Mod. Hosp.* **21**: 564 (Dec.) 1923.

ADDICTION TO "CARBONA"

To the Editor:—On pages 461 and 705 of the current volume of THE JOURNAL are instances of "Carbona" used for narcosis. Two years ago a young man, apparently in good health, told me he had used "Carbona" almost daily for three years to induce narcosis and "pleasant dreams." He was much afraid of the habit, and was sure he could not break it. I assured him he could, and having again got in touch with him since reading of the cases in THE JOURNAL, find that he did completely break the habit.

Incidentally, this man first heard about this use of "Carbona" from another user. The "habit" may be fairly frequent.

REYBURN MCCLELLAN, M.D., Xenia, Ohio.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARIZONA: Phoenix, Oct. 7-8. Sec., Dr. W. O. Sweek, 404 Heard Bldg., Phoenix.

CALIFORNIA: Sacramento, Oct. 20-23. Sec., Dr. Charles B. Pinkham, 908 Forum Bldg., Sacramento.

DISTRICT OF COLUMBIA: Washington, Oct. 14. Sec., Dr. Edgar P. Copeland, Stoneleigh Court, Washington.

FLORIDA: Tallahassee, Oct. 14-15. Sec., Dr. Wm. Rowlett, Citizens Bank Bldg., Tampa.

GEORGIA: Atlanta, Oct. 14-16. Sec., Dr. C. T. Nolan, Marietta.

HAWAII: Honolulu, Oct. 13-16. Sec., Dr. G. C. Milnor, 401 So. Beretania St., Honolulu.

IDAHO: Boise, Oct. 7. Dir., Mr. Chas. Laurenson, Boise.

ILLINOIS: Chicago, Oct. 7-9. Supt. of Regis., Mr. V. C. Michels, Springfield.

IOWA: Des Moines, Oct. 1-3. Sec., Dr. Rodney P. Fagen, Capitol Bldg., Des Moines.

KANSAS: Topeka, Oct. 14. Sec., Dr. Albert S. Ross, Sabetha.

MICHIGAN: Lansing, Oct. 14-16. Sec., Dr. B. D. Harison, 707-8 Stroh Bldg., Detroit.

MINNESOTA: Minneapolis, Oct. 7-9. Sec., Dr. Thos. McDavitt, 539 Lowry Bldg., St. Paul.

MONTANA: Helena, Oct. 7. Sec., Dr. S. A. Cooney, Power Bldg., Helena.

NEVADA: Carson City, Nov. 3. Sec., Dr. S. L. Lee, Carson City.

NEW JERSEY: Trenton, Oct. 21-22. Sec., Dr. Alex Macalister, State House, Trenton.

NEW MEXICO: Santa Fe, Oct. 13-14. Sec., Dr. W. T. Joyner, Roswell.

OKLAHOMA: Oklahoma City, Oct. 14-15. Sec., Dr. J. M. Byrum, Shawnee.

RHODE ISLAND: Providence, Oct. 2-3. Sec., Dr. B. U. Richards, State House, Providence.

UTAH: Salt Lake City, Oct. 7. Dir., Mr. J. T. Hammand, 412 State Capitol Bldg., Salt Lake City.

WEST VIRGINIA: Charleston, Oct. 28. Sec., Dr. W. T. Henshaw, Charleston.

WYOMING: Cheyenne, Oct. 6-8. Sec., Dr. J. D. Shingle, 226 Citizens Bank Bldg., Cheyenne.

California May Examination

Dr. Charles B. Pinkham, secretary, California Board of Medical Examiners, reports the oral and written examination held at Los Angeles, May 15-16, 1924. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Five candidates were examined, all of whom passed. Forty candidates were licensed by reciprocity, and one candidate was licensed by endorsement of government credentials. The following colleges were represented:

College	PASSED	Year Grad.	Number Licensed
Boston University School of Medicine		(1923)	1
McGill University Faculty of Medicine		(1923)	1
University of Halle, Germany		(1909)	1
University of Munich, Germany		(1914)	1
Syrian Protestant College, Beirut, Syria		(1905)	1

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
College of Physicians and Surgeons, San Francisco		(1904)	Nevada
Denver and Gross College of Medicine		(1907), (1910)	Colorado
George Washington University		(1905)	Colorado
Atlanta School of Medicine		(1909)	Georgia
Emory University		(1922)	Georgia
College of Physicians and Surgeons, Chicago		(1898), (1906)	Illinois
Hahnemann Med. Coll. and Hosp., Chicago		(1905), (1909)	Illinois
Illinois Medical College, Chicago		(1899)	Wisconsin
Northwestern University		(1903)	Iowa, (1904) Montana
Rush Medical College		(1899)	Montana, (1908) Washington
University of Illinois College of Medicine		(1918)	Illinois
College of Physicians and Surgeons, Keokuk		(1898)	Montana
Sioux City College of Medicine		(1900)	Iowa
Louisville Medical College		(1906)	Indiana
College of Physicians and Surgeons, Baltimore		(1907)	Nebraska
Johns Hopkins University		(1922)	Maryland
University of Maryland		(1917)	Maryland
Minneapolis College of Physicians and Surgeons		(1911)	Minnesota
University of Minnesota		(1917)	Minnesota
Missouri Medical College		(1895)	Colorado
Dartmouth Medical School		(1886)	Mass.
Albany Medical College		(1908)	New York
Long Island College Hospital		(1922)	New York
Western Reserve University		(1920)	Utah
Willamette University Medical Department		(1906)	Nevada
Jefferson Medical College		(1918)	Utah
Medico-Chirurgical College of Philadelphia		(1910)	Penna.
University of Pennsylvania		(1909)	Washington
University of Pittsburgh		(1909)	Penna.
Western Pennsylvania Medical College		(1906)	Penna.
University of Tennessee		(1900)	Tennessee
Vanderbilt University		(1905)	Oklahoma
Medical College of Virginia, Richmond		(1917)	Virginia
University of Rostock, Germany		(1911)	Minnesota
Syrian Protestant College, Beirut, Syria		(1911)	Colorado

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Johns Hopkins University		(1910)	U. S. Army

Book Notices

JOHN SHAW BILLINGS. Creator of the National Medical Library and Its Catalogue, First Director of the New York Public Library. By Harry Miller Lydenberg, Chief Reference Librarian of the New York Public Library. Boards. Price, $2.50. Pp. 95, with 1 illustration. Chicago: American Library Association, 1924.

Dr. Billings was transferred to the Surgeon General's Office in 1864, after his active service as a surgeon in army hospitals and in the field. Under his direction the leading medical library in this country was collected, so complete in fact that the index and catalogue which he compiled from it covered all branches of medical science. During the thirty-one years of his service in the Surgeon General's Office his energy and versatility led him into many fields of study. These included climatology, military hygiene, vital statistics, ventilation and heating, hospital construction, hygiene, vaccination, medical education, the history of medicine, and medical legislation on all of which he contributed essays. As a result he edited a medical dictionary, and compiled bibliographies on alcohol, on care of the insane, feebleminded and other defectives. His broad interests and scholarship were recognized both at home and abroad as indicated by honorary degrees from Scotch, British and Irish universities. It was planned that Dr. Billings should become professor of hygiene at the University of Pennsylvania, and should serve as a director of the University Hospital, but at the time of his leaving Washington, D. C., the New York Public Library had been projected and there was great need of an executive like Dr. Billings. He was persuaded to undertake the task of consolidating three private foundations with public support to create a unified whole. Mr. Lydenburg was associated with Dr. Billings during the years which saw the formation of an adequate reference and circulating library system for our greatest metropolis. In the present volume he writes in detail of the library problems and of the manner in which they were met. The physician is hardly able to appreciate his services in the library field, and can only regret that medicine was deprived of them.

LA ESPIROQUETOSIS BRONQUIAL EN VENEZUELA. Trabajo de Incorporación para ocupar el Sillón XXIX. Academia Nacional de Medicina, 1923. Por el Dr. Jesús Rafael Risquez. Paper. Pp. 154. Caracas: 1923.

This book on Castellani's disease is based on sixty-six cases studied in Caracas. The work comprises four parts: the etiologic parasite; the disease itself; treatment, and case reports. The bibliography is not complete, and many if not most of the references are taken from THE JOURNAL. Among interesting points discussed are the frequency of bronchial spirochetosis in Caracas, staining and morphologic characteristics of the parasite, distribution and semeiology of the disease in Venezuela, and confirmation of the value of antimony and potassium tartrate in treatment. One noteworthy point is the high prevalence of the disease in Venezuela, Risquez having found it in 33 per cent. of 200 cases of tuberculosis taken at random. This book is a valuable contribution to a field which Latin American authors might do much toward widening and conquering.

MEDICINE, MAGIC AND RELIGION. The FitzPatrick Lectures delivered before The Royal College of Physicians of London in 1915 and 1916. By W. H. R. Rivers, M.A., M.D., D.Sc. With a preface by G. Elliot Smith, F.R.S. Cloth. Price, $3.75. Pp. 147. New York: Harcourt, Brace & Company, Inc., 1924.

The essays that constitute this volume were delivered as the FitzPatrick lectures at the Royal College of Physicians of London (in 1915-1916) and were subsequently published in the *Lancet*. It was Dr. Rivers' intention to elaborate this material for publication as a comprehensive treatise on primitive medicine, but his untimely death interfered with this plan, and the lectures are now issued as originally worked up. The book considers the relationship between medicine and magic, the latter term indicating those changes ascribed to human agency, and the treatment of which involves no elements of appeal to a deity. The superstitions and magical formulas used by savage races are given in detail. A second chapter takes up such matters as tabu, and the way in which magical formulas acquire religious significance. The third chapter concerns the institutions of the various savage tribes and the evolution of medicine and magic, and particularly such methods of treatment as massage, sweating and circumcision. The final chapters are devoted to the mind and medicine, this lecture being delivered in 1919 in the John Ryland's Library. Dr. Rivers was willing to accept much of the freudian doctrines, although he felt it desirable to discard many of the more complex freudian theories. After examining the methods by which the modern church works in relation to the healing of disease, Dr. Rivers became convinced that we are beginning to return to that period in the history of mankind when medicine and religion were intimately bound and when the powers exercised by the church on the mind were used to advantage in the healing of disease.

THE TREATMENT OF THE COMMON DISORDERS OF DIGESTION. A Handbook for Physicians and Students. By John L. Kantor, Ph.D., M.D., Chief in Gastrointestinal Diseases, Vanderbilt Clinic, Columbia University. Cloth. Price, $4.75. Pp. 245, with 64 illustrations. St. Louis: C. V. Mosby Company, 1924.

This is intended to serve as a guide in the treatment and diagnosis of the commoner forms of gastro-intestinal disorders. The principles and objectives of methods used are given so that modifications can be made for individual cases. The illustrations are clear and well chosen; the various diet lists used in the Vanderbilt clinic are given. The subject material is presented in a simple and direct manner, and there are no misstatements of fact. The last chapter, "Headaches Associated with Indigestion," does not come up to the standard of the general work.

STRAHLENBEHANDLUNG BEI KINDERKRANKHEITEN. Von Prof. Dr. W. Birk, Vorstand der Kinderklinik in Tübingen, und Dr. L. Schall, Assistent der Kinderklinik in Tübingen. Paper. Price, Swiss francs, 4, 5. Pp. 77, with 15 illustrations. Berlin: Urban & Schwarzenberg, 1924.

In the section on the quartz lamp, the authors discuss in detail the treatment of rickets, spasmophilia and tuberculosis in children, and refer to its use in some acute infections, such as asthma. They also refer to some of the dangers from its use, especially in the way of skin and respiratory complications. In the section on roentgen-ray therapy, the technic, quality of tubes and dosage is described; also the treatment of tuberculosis, its various localizations, the therapy of glands of internal secretion, the blood and blood-forming organs, eczema, bronchial asthma and hypertrophy of the lymphatic tissues of the pharyngeal ring. The book ends with a chapter on the dangers of roentgen-ray therapy. It is a practical and well considered monograph.

AFFECTIONS DE L'OEIL EN MÉDECINE GÉNÉRALE. Diagnostic et traitement. Par F. Terrien, Professeur agrégé à la Faculté de médecine, et G. Cousin, Chef de laboratoire d'ophtalmologie à la Faculté de médecine. Paper. Price, 40 francs net. Pp. 510, with 128 illustrations. Paris: Masson et Cie, 1924.

The subject matter is well divided into a prologue on the anatomy and physiology of the eye, a first division on general examination and functional troubles of the eye, a second on seismologic examination of the eye and its adnexa, a third on ocular troubles in general diseases, and an epilogue on methods of examination used in ophthalmology. As the book was written essentially for the man in general practice, the prologue is well done and the first part contains the information necessary for the reader for whom designed. There is one bad mistake, however, that can lead to a great deal of medicolegal trouble: the Snellen method of recording vision is taken to denote a fraction, and vision 20/40 is called 50 per cent. vision, whereas in reality it is fully 90 to 95 per cent. vision. The section that deals with disturbances of extra-ocular motility is well written and has a sound, common-sense basis. The third section, however, falls below the others. The recent advances in the etiology of ocular disease are not given the attention they warrant. Witness, for example, keratomalacia. Nor do the modern ophthalmologists consider that 80 per cent. of all cases of iritis are syphilitic. Focal infection is barely mentioned, while dental infection, as the etiology of ocular disease, is scoffed at.

Rheumatism, as the etiology of iritis, has long been relegated to the background, but these authors stress it rather unduly. Phlyctenular disease is considered under the general heading of tuberculous disease of the eye, a classification to which the majority will not agree. However, there is one chapter that seems to fill a long-felt want, that on the ocular complications of gynecologic troubles, both functional and organic. This is well done and deserves more careful attention than it is generally accorded. But when the authors start to discuss the ocular disorders due to disturbances of the endocrine glands, the text borders on the verge of the fanciful. The printing of the book is good, but a more careful index would raise its value markedly. The photographic illustrations are uniformly poor and fail to show the points for which they are inserted. The other illustrations are of only fair quality.

ZUR KLINIK DER NICHTPARALYTISCHEN LUES-PSYCHOSEN. Von Dr. H. Fabritius, Dozent, Chefarzt in Helsingfors. Abhandlungen aus der Neurologie, Psychiatrie, Psychologie und ihren Grenzgebieten, Heft 24. Paper. Pp. 103. Berlin: S. Karger, 1924.

This is an excellent summary of the psychoses in syphilis, exclusive of general paralysis. It is based on the German literature and on twenty-three well observed and carefully reported personal cases, twenty-two of them from the service of Bonhoeffer at the Charité in Berlin. Of the forty-two bibliographic references, only five are not German. The several difficult problems, clinical and pathologic, connected with the occurrence of psychoses in patients with syphilis are somewhat pedantically but quite sensibly discussed, and the author's conclusions, some of them frankly tentative, seem to be quite justified.

Miscellany

FINAL REPORT ON HOOKWORM SURVEY IN SIAM

A survey of the kingdom of Siam, to determine the extent of hookworm infestation, was begun, June 7, 1921, and completed, April 11, 1923. The work was done under the auspices of the Siamese Red Cross Society with the cooperation of the International Health Board of the Rockefeller Foundation, the department of health of Bangkok and local authorities in the various districts. There were six survey units engaged, each comprising a medical officer and four assistants, and each having microscopes and other laboratory equipment, models of sanitary appliances, lecture charts and health literature. They gave public lectures and demonstrations in schools, temples and government offices, and made examinations, offered free treatment for hookworm infestation and rendered such assistance as was possible to improve sanitary conditions. . . .

Of the seventy-four changwats in Siam, this work was conducted in forty-four. The glycerin and salt flotation method of examining stools was used early in the campaign, and the Willis system toward the end. The prevalence of hookworm varied markedly in different parts of the country. From Bangkok northward, the rate of infestation gradually increases in a remarkable manner, and south and southeast from Bangkok the same general increase is observed. From Nakon Rachasima (on the east), the infestation rate falls as one goes north or east toward the Me Kong River. In the changwats in the south, the infestation rate varies with the distance from the sea. It might be that the tide water in rivers and canals acts deleteriously on the hookworm ova or larvae. This explanation, however, could not apply to the northern changwats noted above. An explanation for lower rates of infestation in the lower Menam Chao Phya Valley may be found in the floods, which for one or two months each year are so high that the people frequently are forced to travel in small boats and even cut their rice in the fields in boats. The water may rise high enough to cover land on which villages stand. The polluted land about villages is thus subjected to prolonged inundation with running water which, the report says, must destroy or wash away innumerable hookworm larvae. The presence of such floods leads to the practice of water pollution which, in turn, decreases the extent of soil pollution and thus lowers the general rate of infestation. The complete explanation, however, for the variations in the infestation rates awaits further investigation.

In this campaign, 243,930 persons were examined, of whom 139,859, or 57.3 per cent., were found infested with hookworm. This may be taken as the crude average infestation rate for the country (excluding Monchon Bayap). There was a remarkable uniformity throughout the country in the distribution of infestation in various age groups. The rate rises steadily from infancy, reaching its peak in the 41-60 year period. This is at variance with figures found in hookworm campaigns in other countries, where the maximum infestation is found in young adult life, or from 19 to 40. Females in the various groups were only slightly less heavily infested than males of the same ages. In the 0-5 year period, the infestation rate among girls was frequently found higher than among boys. The rate among priests was almost invariably higher than the general average in their respective districts.

Siam is a tangle of Oriental peoples, but the chief response in this survey was from the Siamese and Laos; many of the hill tribes could not be reached at all. In general, the rate among people in a given locality was found to be influenced more by the region and the occupation than by race.

An indication of the severity of hookworm infestation in Siam is found in the report of examination of 1,190 persons whose hookworms were counted within seven hours after treatment was administered. This, the report says, may be considered as representing about one third of the total number of hookworms harbored. The average number expelled in these persons was 31.4; the largest number expelled by any one patient was 250; 53.5 per cent. of these patients expelled in seven hours twenty hookworms, or fewer, which indicates a mild infestation, as a rule.

Of the 243,930 persons examined, at least 75.8 per cent. had some kind of intestinal parasite. *Ascaris lumbricoides* was the most important other intestinal parasite. It was found in large numbers throughout Siam; in Ranong, it reached 62.3 per cent. of the population. *Trichuris trichiura* was universal but less important, and in the changwat of Prapradang was found in 26.1 per cent. of the people. The various taenias were present in Nakon Rachasima in 29.3 per cent. of the people. Of the 243,930 persons examined, 16.9 per cent. were infested with two kinds of intestinal parasites, 1.8 per cent. with three kinds, and 24.2 per cent. were not infested at all.

Treatment was secondary to the main work of the survey units, but a total of 106,877 persons was given first treatments for intestinal parasites, and 298 persons were treated a second time. Treatments were given early in the morning on an empty stomach, no cathartic having been administered the night before. Oil of chenopodium was usually employed, with a maximal dose of 2 c.c. for adults, which was sometimes divided, and followed in an hour with magnesium sulphate. When capsules could not be used, the chenopodium was dropped into castor oil, and the anthelmintic and purgative taken simultaneously. Thymol was frequently given in regions showing a high rate of infestation with tapeworm. A divided dose was used, with a maximum of 2.6 gm. for large adults, followed in an hour with magnesium sulphate. The only casualty of the whole campaign occurred when a woman was allowed to take 2.6 gm. of thymol at one time.

This survey, among other things, emphasized the need of a sanitary method for night soil disposal, and the survey units endeavored in every way to create a popular desire for such arrangements. The report recommends that hookworm control work be organized in the three centers of heaviest infestation and extend from those centers into less heavily infested areas, and that this program include treatment of the people *en masse*, the widespread installation of sanitary latrines, and that mobile health exhibitions visit the principal cities with effective propaganda in the interest of health education.

Medicolegal

Burden of Proof in Action for Services

(Pittman v. Le Master (S. C.), 121 S. E. R. 677)

The Supreme Court of South Carolina says that this was an action to recover $150, alleged to be the value of services rendered by the plaintiff as a physician to the defendant's wife in childbirth. The action was what is known as one on a quantum meruit, or to recover the reasonable value of services. The defendant met it with the contention that he and the physician had made a special contract covering the service, by which the physician was to be paid $35 plus $3.50 mileage, or a total of $38.50. The trial judge, at the request of the plaintiff, charged the jury that under such circumstances the burden of proof was on the defendant to establish the special contract alleged; and, immediately, at the request of the defendant, charged that on the issue of a special contract, if the evidence was evenly balanced, the jury must find for the defendant on the ground that the plaintiff must make out his case by the preponderance of the evidence. The jury rendered a verdict in favor of the plaintiff for $38.50, and judgment was rendered accordingly; but, on the plaintiff's appeal, that judgment is reversed and the case remanded for a new trial, because the two propositions which the judge charged were inconsistent, and the second one was erroneous. If the burden of proof was on the defendant to establish the special contract, an even balancing of the evidence would of necessity determine the defendant's failure to establish his defense. This principle is settled beyond question: When the plaintiff sues on a quantum meruit and proves the services and their value, he makes out a prima facie case on the reasonable theory that an implied contract has been established to compensate him for their reasonable value. If the defendant relies on a restrictive express contract fixing the amount of compensation, he must set it up as an affirmative defense, the burden of establishing which is on him. In this case there was no contention on the part of the defendant but that the physician had satisfactorily and at his request performed the services indicated. The plaintiff therefore established a prima facie right to recover the reasonable value of such services, unless that value was fixed by an express contract which the defendant alleged and was under obligation to establish. The trial judge correctly charged the law in the first instance, but nullified it by charging that if the evidence was evenly balanced the plaintiff must lose; in other words, that the defendant could successfully carry his burden of proof, the preponderance of the evidence, by evenly balancing the evidence pro and con on the issue of a special contract.

Death from Strangulation After Taking Sal Hepatica

(Gohlke v. Hawkeye Commercial Men's Assn (Iowa), 197 N. W. R. 1004)

The Supreme Court of Iowa says that a member of the defendant association who retired to his room in a hotel in apparent good health at about midnight was shortly thereafter found strangling, and died in a few minutes. A physician testified that there was an open bottle of sal hepatica, a teaspoon with some of the dry powder on it, and a glass with a couple of ounces of water in it on the table. After about two months the body was exhumed and a necropsy held. The brain and other organs of the body were found to be normal and with no evidence of disease except some slight kidney trouble, the presence of gallstones, an enlarged heart, some hardening of the arteries, and a complete closure of the glottis. No immediate cause of death was found except the closing of the glottis resulting in strangulation. The plaintiff who, as beneficiary, sought to have the defendant's insurance obligation enforced, contended that immediately before his death the man had taken a dose of sal hepatica, and that it, or the gas thrown off by its coming in contact with the mucuous membranes of the throat, produced such irritation that the glottis closed and the man died of strangulation. The defendant, on the other hand, contended that the closing of the glottis was the result of an edema, or swelling, caused by high blood pressure and disease of the heart. The conclusion of the court is that it was established by a fair preponderance of the evidence that the closing of the glottis, which brought about the strangulation, was caused by the presence of a foreign substance in the trachea, and not by disease.

The by-laws of the association provided for a certain payment to the beneficiary of a member whenever through external, violent or accidental means, he should receive bodily injuries which should, independently of all other causes, result in death; and the association urged that although it be found that the man came to his death by strangulation after taking sal hepatica, yet that was not a death by such external and accidental means as, under the provision of the by-laws, would entitle the beneficiary to recover, but the court holds otherwise—holds that the plaintiff beneficiary was entitled to have the association required to make an assessment as provided for in its by-laws, to meet its obligation to her, wherefore the court reverses a judgment that dismissed her petition. The voluntary taking of a nonpoisonous, harmless remedy, even though taken in a manner to produce, by effervescence, a gas that would be irritating, but which was not expected or intended to produce injurious results, would, the court thinks, where such a result unexpectedly follows, be a violent, external and accidental means.

In a provision that the association should not be liable for an injury or death from poison, poisonous substances, gases, or anything taken, the expression "or anything" must be construed to mean only a thing of the same general class as those enumerated; that is to say, of a poisonous character. So construed, it would clearly not be applicable to or include a general and commonly used remedy the use of which would not ordinarily be dangerous. Consequently, such a by-law could not have the effect to deprive the beneficiary of a right of recovery where the taking of a nonpoisonous substance was the accidental means of injury and death.

Services of Alienist Rendered Without Contract

(McClenahan v. Keyes (Calif.), 224 Pac. R. 241)

The District Court of Appeal of California, First District, Division 2, in reversing a judgment for $1,821 obtained by the plaintiff against the defendant executor of the will of a Mrs. Howard, says that the plaintiff's claim was for professional services rendered by him as an alienist, the claim consisting in part of a charge for medical treatment and observation of a daughter of Mrs. Howard's, and in part of a charge for attendance as an expert witness in contested proceedings instituted with a view to having Miss Howard declared an incompetent and her person and estate placed under the care of a guardian. The plaintiff first sued Miss Howard for his services, but recovered a justment for only $45, which was affirmed on the ground that, with the exception of attendance when Miss Howard was unconscious and in need of medical aid, his services could not be held to have been rendered at her request or for her benefit. Subsequently he instituted this action against the estate of Mrs. Howard, who had meanwhile died. On the first trial, he obtained a judgment for $1,798.50, which was reversed. When the case was retried, he obtained the judgment for $1,821, which is now reversed, a rehearing denied, and a hearing denied by the Supreme Court of California.

In deciding the former appeal, the supreme court declared the general rule of law to be that one who calls on a physician to render services to another is not liable for those services, in the absence of an express agreement to pay for them; and, though a parent requests medical services for an adult son or daughter, such request does not raise even an implied promise to pay. The court further determined that nothing in the dealings had by the plaintiff either with Mrs. Howard herself or with any of the attorneys showed an employment of the plaintiff, or a promise binding her either expressly or impliedly to pay his charges.

The question on this appeal was merely whether or not the case wore a different aspect because of any new evidence

given at the second trial; and since the record here presented was in all substantial particulars the same as that at the former trial, it followed that this appeal must be controlled by the law of the case heretofore promulgated, and that, since the evidence, weighed by that standard, failed to support findings in favor of the plaintiff, the judgment for $1,821 must be reversed.

It is unfortunate and seemingly inequitable that the plaintiff has had to go unpaid. He gave undoubtedly important and valuable aid much desired by Miss Howard's relatives. And the situation in which he is left is apparently due to the fact that, unmindful of private interest, he trusted to be paid instead of exacting an express agreement from some one competent to act. In different trials he voiced different inferences or opinions as to who was his real debtor; but now, as on the former occasions, liability must be made to depend on the facts in evidence, uninfluenced by personal opinions.

Construction of Contract for Treatment in Sanatorium

(Lakeside Sanitarium v. Dickens (Texas), 259 S. W. R. 1110)

The Court of Civil Appeals of Texas says that this action was brought to recover a balance of $222.16 alleged to be due under a written contract to treat the defendant's wife for insanity, and for $16.79 spent by the plaintiff for laundry and $2.25 for medicine for her use and benefit while she was a patient in the sanatorium. The contract provided for payment by the defendant of $100 for the first four weeks and $45 a week thereafter so long as the patient remained in the sanatorium. She was there, excepting four days, from November 2 to March 3. The defendant pleaded breach of contract by the plaintiff in that the physician who was the sole owner of the sanatorium had agreed at the time that the defendant put his wife in the sanatorium that he would advise him at the end of four weeks whether he could cure or improve her mental condition, and that, if he could not, then the defendant could put her in an asylum; that the physician, knowing at the end of four weeks that he could not improve the patient's mind, induced the defendant to keep her in the sanatorium until March 3, without any improvement whatever; and that therefore the defendant owed nothing under the contract sued on. In addition to such defense to the written contract, the defendant pleaded, in a cross-action, this same oral contract as a separate and distinct contract from the written contract signed by him, and he set up as damages from the alleged breach of the oral contract his expenses in making three trips from his home to San Antonio to see his wife, his loss of time in doing so, and his additional expenses for board while staying in San Antonio. The jury found that the defendant owed $222.16 on the written contract, but nothing for laundry and medicine, and awarded him on his cross-action $160 damages. The judgment in favor of the plaintiff for $222.16 is affirmed, but that in favor of the defendant for $160 is reversed and one rendered that he take nothing in his cross-action.

Nowhere in the written contract on which the plaintiff sued was board, laundry or medicine mentioned. These expenses were incidental to and necessary to the retention and continued treatment of the patient in the sanatorium. The jury had the contract before it, and evidently found that these items were to be paid by the plaintiff out of the sums charged the defendant for treatment. Having reduced its contract with the defendant to writing, the plaintiff should have specified what additional expenses of the patient, if any, should be charged against the defendant. Failing to do so, the jury was authorized to construe the contract most favorably to the defendant. This court will not disturb its finding on this issue.

It was error to render judgment for the defendant on his cross-action. The only testimony as to the oral contract asserted by the defendant was his testimony that when he placed his wife in the sanatorium he had a talk with the physician, who stated that he thought he could tell him at the end of four weeks whether his wife should be further treated in the hospital or should be taken to the insane asylum. Taken in its most favorable light, the court does not think this could be considered as a contract on which a cause of action could be based. It appeared rather to be merely an expression of an opinion.

But if such be treated as a contract, and if breached by the plaintiff, the damages claimed were too remote to be recoverable. The damages that would naturally flow from a breach of the contract alleged by the defendant would be his added expense in keeping his wife in the sanatorium, when, if the physician had notified him that it was useless, he would have taken her out. There was nothing to indicate that if the patient had been put in the asylum the defendant would not have incurred just as great an expense in going to see her or in remaining near her as he did incur for that purpose while she was in the sanatorium. Nor did it appear that it was either necessary or advisable for her husband to be near her or to remain in San Antonio while she was being treated. On the other hand, the fact that the plaintiff, under the written contract, had complete control of her while she was in the sanatorium, and cared for her in every respect, rather indicated that his presence was not necessary, and negatived any contemplation of the physician that the defendant would incur the heavy expenses he alleged that he did incur for that purpose.

Evidence of Purpose in Attempt to Produce Miscarriage

(State v. Rowley (Iowa), 198 N. W. R. 37)

The Supreme Court of Iowa, in affirming a judgment of conviction of the defendant, who was found guilty of the crime of attempting to produce a miscarriage, says that it was contended that the state had failed to establish beyond a reasonable doubt that the operation was not necessary to save the woman's life. The prosecuting witness herself testified that she did not go to the defendant's house for the purpose of having the defendant save her life, and that the condition of her health was good. This made a jury question. Clearly, these statements were competent. Declarations as to intent are generally received in evidence, and the witness stated why she visited the defendant's house. She would have as much knoweldge with reference to her physical condition as any person, and to hold otherwise would make it incumbent on the state to offer expert medical testimony, which in the ordinary case would never be forthcoming. The defendant was not a member of the medical profession, and had no right to practice medicine, and no presumption is indulged under such circumstances that the act was performed in good faith and for a legitimate purpose.

Society Proceedings

COMING MEETINGS

American Association of Railway Surgeons, Chicago, Oct. 15-17. Dr. Louis J. Mitchell, 29 East Madison Street, Chicago, Secretary.

American Child Health Association, Kansas City, Mo., Oct. 15-17. Dr. Philip Van Ingen, 125 East 71st Street, New York, Secretary.

American College of Radiology and Physiotherapy, Chicago, Nov. 12-14. Dr. Roy W. Fouts, 121 South 33d Street, Omaha, Secretary.

American College of Surgeons, New York, Oct. 20-24. Dr. Franklin H. Martin, 40 East Erie Street, Chicago, Director-General.

American Public Health Association, Detroit, Oct. 20-23. Mr. Homer N. Calver, 370 Seventh Avenue, New York, Secretary.

Association of Military Surgeons of the United States, San Antonio, Tex., Nov. 13-15. Major E. E. Hume, M. C., U. S. A., Army Medical Library, Washington, D. C.

Central States Pediatric Society, Rochester-Minneapolis, Oct. 30-31. Dr. H. T. Price, Westinghouse Building, Pittsburgh, Secretary.

Colorado State Medical Society, Denver, Oct. 7-9. Dr. F. B. Stephenson, Metropolitan Building, Denver, Secretary.

Delaware State Medical Society, Milford, Oct. 14-15. Dr. W. O. LaMotte, Industrial Trust Building, Wilmington, Secretary.

Interstate Post-Graduate Assembly of America, Milwaukee, Oct. 27-31. Dr. W. B. Peck, 82 Stephenson St., Freeport, Ill., Managing Director.

Medical Association of the Southwest, Kansas City, Mo., Oct. 13-18. Dr. E. H. Skinner, Rialto Building, Kansas City, Mo., Secretary.

Minnesota State Medical Association, St. Cloud, Oct. 8-10. Dr. Carl B. Drake, Guardian Life Building, St. Paul, Secretary.

Pennsylvania, Medical Society of the State of, Reading, Oct. 6-9. Dr. W. F. Donaldson, Jenkins Arcade, Pittsburgh, Secretary.

Vermont State Medical Society, Burlington, Oct. 9-10. Dr. W. G. Ricker, St. Johnsbury, Secretary.

Virginia, Medical Society of, Staunton, Oct. 14-17. Miss Agnes V. Edwards, 104½ West Grace Street, Richmond, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL for a period of three days. No foreign journals are available prior to 1920, nor domestic prior to 1923. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

33: 421-509 (July) 1924

Intermediate Stage in Development of Skull of Syngnathus Fuscus. J. E. Kindred, Charlottesville, Va.—p. 421.

Maxillary Sinus of Dog; Certain New Structures, Probably Sensory in Nature. T. H. Bast, Madison, Wis.—p. 449.

Studies on Lymphocytes. III. Granulocytopoiesis in Salamander; Monophyletic Theory of Blood Cell Origin. H. E. Jordan and C. C. Speidel, Charlottesville, Va.—p. 485.

American Journal of Public Health, Detroit

14: 647-734 (Aug.) 1924

Deaths Among Taxpayers and Nontaxpayers Income Tax, Providence, 1865. C. V. Chapin, Providence, R. I.—p. 647.

Deaths and Disabilities from Heart Disease. J. L. Heffron, Syracuse, N. Y.—p. 652.

Public Health Exhibition in Siam. H. R. O'Brien.—p. 659.

Examination of School Children, Olmsted County. D. C. Mebane, Rochester, Minn.—p. 662.

Effect of Contamination and Age of Serum on Kahn Precipitation Test. P. L. Kendrick, Lansing, Mich.—p. 673.

Flood Sanitation in Valley of Potomac Between Maryland and West Virginia. E. S. Tisdale, Charleston, W. Va.—p. 677.

Sanitary Engineering Progress in Maryland, 1923-1924. A. Wolman, Baltimore.—p. 681.

Control of Rabies in Connecticut. G. E. Corwin.—p. 688.

Ratio Between Loss on Ignition and Oxygen Consumed for Industrial Wastes and Sewage. M. S. Nichols, Madison, Wis.—p. 693.

Value of Epidemics in Public Health Education. N. Sinai, Ann Arbor, Mich.—p. 695.

American Journal of Tropical Medicine, Baltimore

4: 345-438 (July) 1924

*Flagellate Infections. R. P. Strong, Boston.—p. 345.

*Vitex Peduncularis in Malaria. W. E. Jones and H. W. Butler, New Orleans.—p. 387.

*"Sprue" in Costa Rica. C. Duran, San Jose, C. R.—p. 393.

Intracellular Symbiont of Hog Louse. L. Florence, Princeton, N. J.—p. 397.

*North China Intestinal Parasites of Man. E. C. Faust, Peking, China.—p. 411.

Flagellate Infections.—In studying certain infectious diseases of plants and in searching for animal parasites in the latex of various tropical plants in Central and South America, a flagellate parasite was discovered by Strong in three species of *Euphorbiae*. In one district in Panama a very extensive phytodemic of the infection of *Euphorbiae* was found to exist. The insect *Charlesterus cuspidatus* transmitting the infection from the plant to a species of lizard, *Cnemidophorus lemniscatus*, was also discovered. From extensive experiments on animals it was demonstrated that the flagellate as it occurs in the plant and also in the intestinal tract of the insect, is not pathogenic for vertebrates. However, after the flagellate has passed through the insect to the lizard, it acquires pathogenic properties and may give rise to a form of tropical ulceration in the skin, as was demonstrated from experiments in the monkey. In this ulceration the leishmania form of the parasite and not the flagellate stage is encountered. This apparently is the first instance of this nature in which such a chain of infections has been demonstrated.

Vitex Peduncularis in Malaria.—Jones and Butler investigated the claims made by J. S. C. Vaughan for *Vitex peduncularis* as a specific cure for malaria in five cases. No conclusive evidence was obtained of any effect whatever of the *Vitex* on the symptoms or the plasmodia in malaria. On the contrary, the effect of quinin in four cases and apparently of neo-arsphenamin in one case, in all of which *Vitex* had not been effective, was prompt and striking. The information obtained seems to show that if *Vitex* has any effect in malaria it is negligible as compared with that of quinin.

Sprue in Costa Rica.—Duran asserts that cases of "sprue," even those of long duration, may be cured rapidly with a diet that excludes cane sugar and flour of all kinds, leaving the patient free to take milk, fruits, meats and green vegetables. There is nothing disagreeable about this diet and the patients are able to live on it perfectly well, especially in the countries where the disease is prevalent and in which, as a rule, a great variety of fruits and vegetables are to be obtained all the year round.

Intestinal Parasites of North China.—An intensive study was made by Faust of third-class patients on the medical service of the Peking Union Medical College Hospital to determine the importance of parasitic infection in clinical diagnosis in North China. Sixty cases were studied. Eighty per cent. of these cases harbored intestinal entozoa, and 53.3 per cent. harbored clinically important parasite infections. At least 89 per cent. of the patients secured their infections in the North China nosogeographic area. Improper disposal of night soil is regarded as being responsible for all of the helminthic infections in the intestinal tract of man in North China.

Archives of Neurology and Psychiatry, Chicago

12: 131-248 (Aug.) 1924

*So-Called Unit Characters and Hereditary Disturbances of Nervous System. W. Timme, New York.—p. 131.

*Hereditary Factors in Optic Atrophy and Retinitis Pigmentosa. W. H. Wilmer, Washington, D. C.—p. 137.

*End-Results in Sixty-Two Cases of Spina Bifida and Cephalocele. G. D. Cutler, Boston.—p. 149.

*Developmental Anomaly of Cerebral Cortex. E. A. Linell and B. McD. Koster, Toronto.—p. 167.

*Loculated Meningitis. N. E. Clarke, Ann Arbor, Mich.—p. 173.

*Pathology and Pathogenesis of Unilateral Internal Hydrocephalus. N. W. Winkelman, Philadelphia, and J. L. Eckel, Buffalo.—p. 187.

*Syphilis in Colored and White Women with Mental Disorder. L. D. Hubbard, Washington, D. C.—p. 198.

Unit Characters and Hereditary Disturbances of Nervous System.—In studying heredity in disease, Timme feels that it is necessary to determine not merely the existence in ascendant or descendant of the similar set of symptoms connoted by this disease in the patient, but further, to consider the possibility of frequently recurring constitutional anomalies in the family studied as having some bearing on the pathogenesis of the disease in question, and, perhaps, even of such an anomaly concealing one of the true unit factors of the disease.

Hereditary Factors in Retinitis Pigmentosa.—For the term "retinitis pigmentosa," which, he says, is a misnomer and should therefore be abandoned, Wilmer suggests the term "pigmentary degeneration of the retina," or the adoption of Collins' suggestation of "abiotrophy of the retinal neuroepithelium," or of the term "retinal abiotrophy," which combines brevity with a sufficiently accurate description of the condition. The affection is a degenerative change, and there is strong evidence of its being a truly abiotic process. It is widely distributed, with no certain racial immunity. It appears at varying periods of life, in varying degrees of pathologic intensity and extent of tissue involvement. Syphilis does not seem to be a cause, although the two conditions may exist in the same person. The time of manifestation of this degeneration and its severity are influenced by the degree of tissue liability, the general health of the subject and the occurrence of various superadded diseases like typhoid fever, pneumonia, syphilis and exanthems and other conditions.

Spina Bifida with Cephalocele.—Patients with spina bifida and with cephalocele were traced by Cutler. Of 104 patients with spina bifida admitted, 31 died; a mortality of 29.8 per cent. Only 65 patients were treated by operations, with 31 deaths, a mortality not to exceed 47.69 per cent. In Cutler's own series, there were 39 patients with spina bifida treated by operation; 22 were discharged, 16 died, and in one instance the result was not known. This gives an operative mortality of 41.02 per cent. The causes of death were: 6, hydrocephalus; 3, hydrocephalus plus meningitis; 2, meningitis; 2, leakage of cerebrospinal fluid; 2, cause unknown (1 a few hours after operation, cause not determined, 1 on the twelfth day after operation, with subnormal temperature), and 1 bronchopneumonia on the thirty-third day after operation. One patient had meningo-encephalocele; the other 4 presented cranial meningoceles of various sizes. They were all located

in the region of the posterior fontanel. The 4 meningoceles were treated by operation, and the meningo-encephalocele patient was taken from the hospital untreated at the parents' request. Of the 4 patients operated on, 1 died of hydrocephalus, 2 are well, the fourth has survived operation ten days but is developing hydrocephalus fairly rapidly. The subsequent history of the meningo-encephalocele is unknown. Early radical operation may prevent deaths from infection or leakage of cerebrospinal fluid, but the frequent incidence of hydrocephalus and death after removal of the sac is cause for a guarded prognosis. The contraindications to operating are: hydrocephalus, extensive paralysis and infected sacs. Small cephaloceles with thin membranes, should be operated on to prevent infection and leakage. There is always danger of hydrocephalus resulting after operation.

Developmental Anomaly of Cerebral Cortex.—Linell and Koster report the case of a man, aged 53, a diabetic who was receiving insulin treatment. On admission he was acutely ill with pneumonia, to which he succumbed within two days after entering the hospital. There was nothing in his medical history to suggest mental defect or disease. Coronal sections of the frontal lobes disclosed the presence of multiple gray masses scattered irregularly through the white matter of the left frontal lobe. The right frontal lobe was normal, and there was no edema of the brain substance. The anterior horns of the lateral ventricles appeared normal and equal in size, and the cerebrospinal fluid contained in them showed no differences between the right and the left sides either in appearance, amount or tension. The brain showed no other defect or disease. The cerebral arteries were normal. It appears that some abnormal process acting during the fourth month of fetal life had, to a limited extent, checked the outward migration of neuroblasts in the left side of the forebrain vesicle. Although there was no trace of grouping or layering of these stranded groups of elements, some attempt at ripening was seen in the formation of immature pyramidal cells.

Loculated Meningitis.—Clarke believes that his case is the first in which the diagnosis of syphilis has been definitely confirmed by the demonstration of *Spirochaeta pallida* in the spinal tissues. This case did not show the formation of a culdesac in the spinal canal to explain the formation of the xanthochromia and massive coagulation in the spinal fluid. A brief review is given of the syndrome of Froin with the various views concerning its formation and etiology.

Unilateral Internal Hydrocephalus.—One case of this condition, occurring in a man, aged 62, is cited by Winkelman and Eckel. Clinically, unilateral hydrocephalus cannot be diagnosed with certainty. It is to be suspected in older patients when there are repeated strokes on the same side or a slowly progressive hemiplegia with convulsions and mental deterioration where other conditions, such as brain tumor, etc., can be ruled out. Unilateral hydrocephalus can occur, as shown by Dandy, from obstruction at the foramen of Monro. It can also occur as the result of arteriosclerotic or encephalitic changes in the brain substance. Partial unilateral hydrocephalus occurs as the result of localized vascular or encephalitic changes resulting in what Weber calls hydrocephalus ex vacua.

Syphilis in Women with Mental Disorder.—Over a period of seven years the number of colored admissions to the female service of St. Elizabeth's Hospital in Washington, D. C., was approximately one half the number of white admissions. Of 1,000 white patients admitted to the female service, 5.9 per cent. were syphilitic; of 500 colored patients, 16.4 per cent. were syphilitic. During the past seven years the general trend of the percentage of syphilitic admissions has been downward. Some form of involvement of the central nervous system was found in 47.5 per cent. of the syphilitic colored women and in 45.7 per cent. of the syphilitic white women. General paresis was present in 6.6 per cent. of the colored women and 1.8 per cent. of the white women patients. Of the colored syphilitic women, 40.2 per cent. were paretic, but only 30.5 per cent. of the white syphilitic women were paretic. The most common admission age of both colored and white paretic patients was between 35 and 45. The average length of the life of a patient with paresis after admission to the hospital was found to be less for the colored women than for the white. Confusion was the outstanding feature of about 39 per cent. of the psychoses of the white paretic patients, euphoria in 33.3 per cent. and excitement in 27.7 per cent., whereas euphoria ranked highest in the colored paretic patients (37.5 per cent.) and confusion was the most conspicuous element in 25 per cent.

Archives of Occupational Therapy, Baltimore

3: 255-338 (Aug.) 1924

Recreations. L. H. Ziegler, Baltimore.—p. 255.
Physical Exercise and Games as Occupational Therapy. R. K. Atkinson.—p. 267.
Rehabilitation from Standpoint of Industry. W. I. Hamilton.—p. 277.
Occupational Therapy with Psychoneuroses. J. A. Howell, Waukesha, Wis.—p. 285.
Music Cataloging. W. R. Dunton, Jr., and H. F. Carleton.—p. 289.

Arkansas Medical Society Journal, Little Rock

21: 51-70 (Aug.) 1924

Hot Springs of Arkansas, America's National Health Resort. L. M. Maus, U. S. Army.—p. 51.
Law of Conditions Is as Positive as Law of Gravitation. D. C. Walt, Little Rock.—p. 57.
Indications for Suspension Laryngoscopy. R. H. T. Mann, Texarkana.—p. 63.

Boston Medical and Surgical Journal

191: 381-428 (Aug. 28) 1924

*Problem of Industrial Lame Back. R. B. Osgood and L. B. Morrison, Boston.—p. 381.
*Periarterial Sympathectomy. A. W. Allen, Boston.—p. 391.
*Charcoal in Flatulence and Eructation. M. L. Bowman, Boston.—p. 402.
Enuresis of Twenty-Eight Years' Duration Following Instrumental Delivery. F. W. Johnson, Boston.—p. 405.

Industrial Lame Back.—Osgood and Morrison are of the opinion that a preemployment physical examination by a physician who knows not only his medicine, but his mechanics would greatly lessen the numbers of back cases in industry. The labor unions should look on this, not as an affront, but as an opportunity. Skilled and experienced interpretation of meticulously taken roentgenograms by roentgenologists and surgeons familiar with the clinical pictures is the most valuable single aid in disproving, suggesting, confirming or establishing the diagnosis made by careful history and physical examination. The stereoscope and the Bucky diaphragm have become technical necessities. Ability to estimate and evaluate the extent to which psychic factors enter, routine method of examination of the patient, and skill in interpreting the findings of this examination acquired by clinical experience and anatomic knowledge are the essential prerequisites in solving the knotty problems of lame back in industry.

Periarterial Sympathectomy.—Allen is convinced that periarterial sympathectomy can be performed without ill effects to the patient. Characteristic reactions, although in some cases of short duration, usually follow the procedure. Slight benefit may occur in the absence of typical secondary reactions. Improvement does not always follow when characteristic reactions are obtained. The beneficial results in thrombo-angiitis obliterans are not sufficiently lasting to warrant the procedure in this disease. Selected cases of arteriosclerotic gangrene may derive sufficient benefit from the operation to make it worth while.

Charcoal in Flatulence and Eructation.—In the nine cases investigated by Bowman it seemed that the administration of kelp charcoal definitely relieved the discomfort due to gastro-intestinal gas. The patients with abdominal distension were more relieved than those complaining chiefly of eructation. Those complaining of eructation alone were observed to be air swallowers in all but one instance, and that patient was relieved. The charcoal was in equilibrium with air before administration, so could be expected to have little effect on swallowed air. An aqueous suspension of charcoal was used throughout. The seemingly favorable results of the administration of kelp charcoal may be due to: (*a*) The alteration of gastro-intestinal ferments (hydrochloric acid, pepsin, pancreatic ferments, etc.) toward normal, if it may be conceived that they are abnormally active in stasis of

the tract. (*b*) Charcoal may irritate the sluggish tract to an extent sufficient to stimulate absorption or elimination of gas. This irritation may be mechanical, due to its rough physical character, or it may accelerate gas production to a point causing rapid expansion of the bowel, thus increasing its irritability. (*c*) Stasis of the bowel may lead to the piling up of toxic substances, thus inducing a vicious cycle. Charcoal has been demonstrated to absorb toxic substances. Kraus and Barbara have shown absorption of bacterial toxins by charcoal both in vitro and in the organism. De Houssay has shown the absorption of snake venom by charcoal. Joachimoglu has shown the prevention of strychnin poisoning in the gastro-intestinal tract of dogs by various types of charcoal. It is conceivable then, that charcoal may absorb toxic agents present in the abnormally functioning bowel, and this removal be sufficient to allow the bowel to approach normal function and eliminate or absorb gas and in this way reduce distension.

Colorado Medicine, Denver

21: 249-282 (Sept.) 1924

Treatment of Prostatism. W. M. Spitzer, Denver.—p. 254.
Duodenojejunostomy for Megaloduodenum. F. C. Buchtel, Denver.—p. 258.
Aortic Aneurysm. W. S. Dennis, Denver.—p. 260.
Diseases of Thyroid. J. E. Struthers, Denver.—p. 263.
Early Diagnosis and Treatment of Toxic Goiter. C. C. Tiffin, Seattle.—p. 271.

Endocrinology, Los Angeles

8: 493-616 (July) 1924

*Behavior of Testis Under Certain Conditions. C. R. Moore, Chicago.—p. 493.
*Quantitative Study of Human Pituitary. A. T. Rasmussen, Minneapolis.—p. 509.
Study of Four Thousand Cases of Goiter. A. S. Jackson, Madison, Wis.—p. 525.
*Hetero-Activity of Pituitary with Hyperthyroidism. C. M. Wilhelmj, St. Louis.—p. 532.
*End-Result in Thyrotoxicosis. G. H. Hoxie and J. Z. Smith, Kansas City, Mo.—p. 551.
Rickets and Parathyroids. F. S. Hammett, Philadelphia.—p. 557.

Function of Scrotum.—Moore states that the scrotum of mammals is now to be considered a local thermoregulator for the testis and that the regulatory or functional capacities are indispensable for the production of differentiated germ cells or the maintenance of those already produced.

Cells in Pituitary.—Rasmussen is making a differential count of the types of cells in pars anterior based on from 100 to 200 sample areas from different regions of the lobe and involving in each hypophysis the counting of from 10,000 to 25,000 cells. The ten normals for which figures are available indicate that about 50 per cent. are chromophobes or chief cells (varied from 37 to 64 per cent.), 35 per cent. acidophils (varied from 23 to 43 per cent.) and 15 per cent. basophils (varied from 9 to 27 per cent.).

Hetero-Activity of Pituitary with Hyperthyroidism.—Wilhelmj's case was an example of the so-called normal type of preadult hyperactivity of the anterior lobe of the pituitary with hyperfunction of the thyroid. In this type the head is large but in proportion to the body, and the features are well balanced. The hands and feet, while large, are also well proportioned, and radiograms show slight mushrooming of the terminal phalanges. The genitalia and sex glands are normally or even overdeveloped, and the sex functions, libido, potentia and menstruation are normal as long as the hyperfunction is maintained, but are totally or partially lost if the function changes to under activity. The treatment employed in this case consisted of the administration of 10 grains of pituitary extract (whole gland) by mouth, after each meal and at bedtime, and subcutaneous injection of 1 c.c. of surgical pituitary extract twice per week. There was a gradual amelioration of all symptoms, such as headaches, vertigo, constipation, etc.

End Results in Thyrotoxicosis.—The patient whose case is cited by Hoxie and Smith had been operated on twice and had also been treated with the injection of boiling water, and yet died some years later with all the symptoms of acute thyrotoxicosis and evidence of proliferation of the thyroid gland. The authors interpret this case as one showing how little operative treatment gets at the cause of the proliferation of thyroid tissue.

Georgia Medical Association Journal, Atlanta

13: 331-376 (Aug.) 1924

Symposium on Diseases of Children. Status Thymicus in Children. W. N. Adkins and W. T. Freeman, Atlanta.—p. 331.
Study in Tetany. C. Thompson, Millen, Ga.—p. 338.
Intestinal Protozoa. V. P. Sydenstricker, Augusta, Ga.—p. 345.
*Case of Cyanosis Due to Poisoning from Shoe Dye. H. I. Reynolds, Athens, Ga.—p. 348.

Cyanosis Caused by Shoe Dye.—In Reynolds' case the poisoning resulted from the wearing of dyed shoes. Cyanosis came on or was noticed about three hours after putting on the dyed shoes. The shoes were worn from 1 to 8 p. m. The only symptoms complained of were headache, dizziness, and finally nausea and vomiting (once). The only sign was intense cyanosis. Improvement did not begin until the shoes were removed. Oxygen had no effect on the cyanosis. The blood, eight hours after removal of shoes and treatment, showed 15 per cent. reduction in red blood cells. Recovery was complete in twenty-four hours.

Johns Hopkins Hospital Bulletin, Baltimore

35: 229-264 (Aug.) 1924

*Respiratory Gases in Ventricular Paroxysmal Tachycardia. F. R. Dieuaide, Baltimore.—p. 229.
*Meningeal Relations of Hypophysis Cerebri. W. Hughson, Baltimore.—p. 232.
*Syphilitic Arthritis with Eosinophilia: Recovery of T. Pallidum from Synovial Fluid. A. M. Chesney, J. E. Kemp and W. H. Resnik, Baltimore.—p. 235.
Problems of Tongue Innervation: Course of Proprioceptive Nerve Fibers, Autonomic Innervation of Skeletal Musculature. O. R. Langworthy, Baltimore.—p. 239.
*Spontaneous Peristalsis of Excised Whole Uterus and Fallopian Tubes of Sow with Reference to Ovulation Cycle. G. B. Wislocki and A. F. Guttmacher, Baltimore.—p. 246.
Influence of Temperature on Rhythm of Isolated Heart of Young Chick Embryo. W. H. Lewis, Baltimore.—p. 252.
*Case of Polycythemia Vera; Familial Features; Treatment with Phenylhydrazine. T. Owen, Baltimore.—p. 258.

Paroxysmal Tachycardia.—A case of paroxysmal tachycardia of ventricular origin with retrograde mechanism is reported by Dieuaide. No method of preventing or terminating the attacks was found. Quinidin therapy was apparently followed by an unusual bigeminal rhythm due to ventricular contractions which were followed by the auricles. During the paroxysms retrograde heart block sometimes appeared. There was a definite decrease in the oxygen saturation and in the carbon dioxid content of the arterial blood in the presence of the tachycardia. The basal metabolism in one paroxysm was elevated 16.7 per cent. The respiratory gases and basal metabolism were normal during the normal cardiac mechanism.

Meningeal Relations of Hypophysis Cerebri.—The stalk of Rathke's pouch disappears before the brain has become completely surrounded by its meningeal coverings in the embryo, thus making the investment of the hypophysis cerebri by the subarachnoid space developmentally possible. The complete investment of the hypophysis by the subarachnoid space in dogs and cats has been demonstrated by Hughson by two methods of injection, either by suction, after the cerebrospinal fluid pressure has been reduced to below zero, or at an increase of from 50 to 80 mm. of fluid above normal. Passage of fluid from the subarachnoid space into the substance of the gland has also been shown under these same conditions.

Syphilitic Arthritis with Eosinophilia.—Two cases are reported by Chesney, Kemp and Resnik that presented enlarged, tender lymph nodes, eosinophilia and subacute polyarthritis in association with syphilitic infection. Neither patient showed any cutaneous manifestations. In these patients there was no evidence of an acute gonococcal infection anywhere in the genito-urinary tract; on the other hand, the positive inoculation tests with the lymph nodes proved the presence of an active syphilitic infection. In view of the involvement of the temporomandibular and sternoclavicular joints, there was a similarity in the distribution to gonococcal arthritis, and the resemblance was the more striking in one

case with "painful heels." However, the prompt response to arsphenamin treatment leaves no doubt that the arthritis was syphilitic in nature. The recovery of *Spirochaeta pallida* from the synovial fluid of one patient indicates that in syphilitic arthritis the organism may be free within the joint cavity itself. So far as can be ascertained from a survey of the literature, this organism has not previously been recovered from the joint fluid of patients with acquired syphilis.

Spontaneous Peristalsis of Uterus and Tubes.—The whole internal genitalia of the sow were observed by Wislocki and Guttmacher in a bath of warm oxygenated Locke's solution. Spontaneous peristalsis and antiperistalsis were observed in both fallopian tubes and in the uterus. This activity suggests a possible mechanism for the transportation of ova.

Polycythemia Vera.—The case of polycythemia cited by Owen is of interest for several reasons, namely: the symptoms were neurologic; the disease was discovered in another member of the family without symptoms; and phenylhydrazin was used as the only treatment, other than rest in bed. A rather detailed history and physical examination is given because of the presence of the typical signs in a marked degree, and also of some smaller interesting changes (especially in the extremities and finger nails) not noted elsewhere.

Journal of Biological Chemistry, Baltimore

61: 1-302 (Aug.) 1924

Preparing Large Quantities of Yeast Nucleic Acid as Magnesium Compound. E. J. Baumann, New York.—p. 1.

*Effects on Animals of Yeast Growth-Promoting Vitamin. J. Deas, Toronto.—p. 5.

*Effect of Exercise in Diabetes. II. Lactic Acid Formation in Phlorizin Diabetes. R. O. Loebel, D. P. Barr, E. Tolstoi and H. E. Himwich, New York.—p. 9.

*Toxin in Blood of Parathyroidectomized Dogs. I. Greenwald, New York.—p. 33.

Alkalosis from Injections of Hydrazin Sulphate in Dogs. B. M. Hendrix and A. J. McAmis, Galveston, Texas.—p. 45.

Determination of Nitrogen in Connection with Wet Combustion Method for Carbon. A. K. Anderson and H. S. Schutte, State College, Pa. —p. 57.

Modification of Molybdic Method for Determination of Inorganic Phosphorus in Serum. S. R. Benedict and R. C. Theis, New York.—p. 63.

*Determination of Phenols in Blood. R. C. Theis and S. R. Benedict, New York.—p. 67.

Gravimetric Microchemical Technic. L. Dienes, Asheville, N. C.—p. 73.

Determination of Calcium, Magnesium and Phosphorous in Animal Substances. L. Dienes, Asheville, N. C.—p. 77.

*Rôle of Liver in Parathyroid Tetany. J. Blumenstock and A. Ickstadt, Chicago.—p. 91.

Chemistry of Grape Pigments. II. Anthocyans in Clinton Grapes. R. J. Anderson and F. P. Nabenhauer, Geneva, N. Y.—p. 97.

*Effect of Temperature on Protein Intake. W. Denis and P. Borgstrom, New Orleans.—p. 109.

Nitrogenous Constituents of Juice of Alfalfa Plant. II. Basic Nitrogen. H. B. Vickery, New Haven, Conn.—p. 117.

Effect of Cod Liver Oil on Growth of Young Chickens. L. C. Dunn, Storrs, Conn.—p. 129.

Presence of Valine in Zein. H. D. Dakin, Scarborough-on-Hudson, New York.—p. 137.

Formation of *l*-Malic Acid as Product of Alcoholic Fermentation by Yeast. H. D. Dakin, Scarborough-on-Hudson, N. Y.—p. 139.

*Acid-Base Equilibrium of Normal Guinea-Pigs, Rabbits and Rats. J. A. Hawkins, New York.—p. 147.

Lignoceric Acid. P. A. Levene, F. A. Taylor and H. L. Haller, New York.—p. 157.

Formation of *l*-Leucic Acid in Acetone-Butyl Alcohol Fermentation. E. G. Schmidt, W. H. Peterson and E. B. Fred, Madison, Wis. —p. 163.

Simplified Method for Cholesterol Determination of Blood. S. L. Leiboff, New York.—p. 177.

Effect of Acute Scurvy on Subsequent Nutrition and Growth of Guinea-Pigs. W. E. Anderson and A. H. Smith, New Haven, Conn. —p. 181.

Invertase in Honey. J. M. Nelson and D. J. Cohn, New York.—p. 193.

*Effect of Heat Treatment of Milk Feedings in Mineral Metabolism of Infants. A. L. Daniels and G. Stearns, Iowa City, Iowa.—p. 225.

*Effects of Insulin on Carbohydrate and Phosphorus Metabolism of Normal Individuals. N. R. Blatherwick, M. Bell and E. Hill, Santa Barbara, Calif.—p. 241.

Metabolism of Catalytic Action of Iron Salts. I. O. Baudisch and L. A. Welo, New York.—p. 261.

Autolysis. XI. Relation of Iso-Electric Point to Digestibility. A. B. Hertzman and H. C. Bradley, Madison, Wis.—p. 275.

*Insulin and Phlorizin Glycosuria. A. R. Colwell, Chicago.—p. 289.

Yeast Promoting Vitamins.—It is shown by Deas that malt rootlets and combination infusion of the same and the fractions known as Bios I and Bios II of the yeast growth-promoting vitamin either separately or in combination are insufficient to produce the growth of rats. Consequently Wildier's bios, and Funk's vitamin D, are not identical with the rat growth-promoting vitamin B. It is not identical with the antiscorbutic vitamin C.

Effect of Exercise in Diabetes.—The sources of energy in muscular exercise are discussed by Loebel et al. and the following working hypothesis is advanced: (*a*) That during the contractile phase of muscular activity energy is available because of the chemical reactions which result in the formation and neutralization of lactic acid. These reactions occur even during complete phlorizin diabetes and glycogen depletion. (*b*) That during the recovery phase the lactic acid is reconverted to glycogen by means of energy derived from the processes of oxidation. The respiratory quotients indicate that according to the conditions of the experiment the energy may come from carbohydrate alone, from fat alone, or from any combination of the two. In phlorizin diabetes fat must furnish the chief, if not the only, source of energy during the recovery phase.

Toxin in Blood After Parathyroidectomy.—If there is a toxin in the blood after parathyroidectomy, Greenwald says this toxin must be either volatile, or quite insoluble in 80 per cent. alcohol or else be extremely unstable. In his opinion, there is no such toxin. The hypothesis is quite unnecessary and is not supported by any satisfactory evidence.

Determining Phenols in Blood.—A method is described by Theis and Benedict by which phenols can be determined directly on the Folin-Wu filtrate. The figures obtained by this method on twenty bloods average 0.4 mg. per hundred cubic centimeters lower than the figures of the Rakestraw method on the same bloods.

Rôle of Liver in Parathyroid Tetany.—The rôle of the liver as the detoxicating agent in tetany is questioned by Blumenstock and Ickstadt. Their results indicate that substances absorbed from the bowel are not the direct toxic agents as such, but they may cause tetany after being modified by some tissues, most probably the liver; the toxic substances absorbed from the bowel may cause hepatic destruction which then gives rise to the tetanic condition. The latter interpretation would explain why an increase in permeability of the bowel will promote tetany. It would also explain the difficulty of controlling by dietary measures parathyroidectomized animals who are pregnant or are in "heat," for it is possible in such animals that substances that cause hepatic injury enter the circulation from sources other than the bowel. Luckhardt's belief that the calcium deficiency in parathyroidectomized animals might well be an effect of the tetany condition rather than its cause is supported by Blumenstock and Ickstadt.

Effect of Temperature on Protein Intake.—The results obtained by Denis and Borgstrom furnish evidence in favor of the view that increase of temperature is accompanied by a decrease of protein intake, and that, apart from the variations due to seasonal changes, the inhabitants of the semitropical portions of this country probably consume an amount of protein considerably below the quantity reported as the average intake for the nation.

Acid-Base Equilibrium of Guinea-Pigs.—It is apparent from Hawkin's observations that rabbits and guinea-pigs are not very satisfactory animals for experiments involving the study of the acid-base equilibrium. They not only show a great individual variation, but the same individual varies from day to day. On the other hand, the rat shows considerable constancy both in the p_H and carbon dioxid content of the whole blood. The guinea-pig which shows the greatest variations in the acid-base equilibrium also has the least stable body temperature, while the rat with a relatively stable body temperature has the smallest fluctuation in the reaction of the blood. In both respects the rabbit falls between the two.

Calcium Balance of Infants.—Attention is called by Daniels and Stearns to the fact that in making calcium balance in infants, it is essential that stools be marked carefully off. When this was done it was found that the fecal elimination on the same diet was very constant. The calcium and phosphorus retention in infants fed quickly boiled milk mix-

tures was considerably greater than it was when the milk mixtures were pasteurized. The fecal calcium and phosphorus were greater during the period when pasteurized milk feedings were given indicating that the longer heat treatment of milk results in a decrease in the availability of the phosphorus and calcium in the milk mixtures. There appears to be some relationship between the calcium, phosphorus and nitrogen retentions. It seems probable that the calcium needs of children are very largely determined by their skeletal development. A baby fed pasteurized milk over a long period of time is receiving too little calcium for his growth needs.

Effect of Insulin on Carbohydrate Metabolism.—The observations made by Blatherwick et al. bring additional support to the hypothesis that a combination of hexose with phosphoric acid is an intermediate product in the metabolism of carbohydrate. The excretion of normal urine sugar is not appreciably affected by the injection of insulin. The amount of normal urine sugar seems to be quite independent of the blood sugar concentration when this is below the renal threshold. Muscular activity causes a greater excretion of phosphorus in the urine.

Insulin and Phlorizin Glycosuria.—Two experiments are described by Colwell in which by the use of uniform milk and cream feedings phlorizinized dogs were kept running steady glucose excretions for six days each, the animals finally completing the experiment in excellent physical condition. These dogs were given injections of insulin, three in all, with resultant depressions in the outputs of sugar corresponding with 0.14, 0.20 and 0.80 gm. per unit of insulin given. Following one of the injections the nitrogen was also definitely diminished for eight hours, and was, perhaps, slightly diminished after the other two injections. It is suggested that impairments of elimination due to toxic effects on the kidneys or the tissues at large following the administration of insulin preparations, coupled possibly with some slight increase of the oxidation of glucose due to insulin itself, would explain the phenomena. The experiments confirm the view that epinephrin has no power to increase the glycosuria of phlorizinized dogs after precautions have been taken to render them glycogen free.

Journal of Laboratory and Clinical Medicine, St. Louis

D: 733-802 (Aug.) 1924

Pathologist of 1940. W. C. MacCarty, Rochester, Minn.—p. 733.
*Clinical Value of Vital Staining. B. H. Hager, Rochester, Minn.—p. 738.
*Kidney Involvement from Prostatic Hypertrophy. New Theory of Explanation. A. D. Bush, Augusta, Ga.—p. 743.
*Application to Cerebrospinal Fluid of Complement Fixation Test for Gonorrhea in Obscure Cases of Nervous Disease. F. Green, Montreal.—p. 750.
*Uric Acid Content of Spinal Fluid. A. Bernhard, New York.—p. 753.
Effect of Hydrogen-Ion Concentration on Precipitation of Colloidal Benzoin and Gold Solutions by Cerebrospinal Fluid. L. W. Shaffer, Rochester, Minn.—p. 757.
*Cultivation of Tubercle Bacilli: Use of Guinea-Pig as Diagnostic Test Animal for Tuberculosis. H. J. Corper, Denver.—p. 766.
Technic for Demonstrating Reticulum Fibers in Zenker-Fixed Paraffin Sections. N. C. Foot, Cincinnati.—p. 777.
Stability of Kolmer's New Antigen for Complement Fixation Tests in Syphilis. R. A. Kilduffe, Los Angeles.—p. 781.
Simplified Method for Recording Smooth Muscle Movements. G. R. Love, Chicago.—p. 783.
Automatic Short Circuiting Device for Induction Shocks. L. F. Shackell, Salt Lake City.—p. 785.
Apparatus for Determination of Blood Nitrogen by Folin Method. D. P. Osborn, Detroit.—p. 788.
Method for Removal of Natural Antisheep Amboceptor from Human Serum. R. A. Kilduffe, Los Angeles.—p. 789.
Bacteriologic Incubator Room. B. White and R. N. Nye, Boston.—p. 790.

Value of Vital Staining.—That vital stains have a real place in the study of pathologic secretions Hager says can easily be demonstrated. Material expressed from the prostate and seminal vesicles can be studied in a fresh condition and also in smears. Desquamated epithelium and leukocytes are distinctly stained, and stand out sharply, thereby making it possible to distinguish the different cells and elements. Spermatozoa are clearly stained, and any variations in their structure may easily be noted. Intracellular diplococci can be seen distinctly, but they are best studied in the smear, using the polychrome-methylene blue stain, which is much superior to methylene blue and furnishes splendid pictures of cell structure and bacteria. The nontoxic stains are probably of greatest scientific value. Secretions from the urethra, during acute gonorrheal urethritis, have been studied, using neutral red as a stain. Leukocytes have been observed which were very active, extending their pseudopods in rapid succession, and containing as many as eighteen pairs of intracellular cocci which were stained an orange red. From the study of normal blood, it seems possible that the study of pathologic blood might afford even more promising and instructive investigation.

Kidney Involvement in Prostatic Hypertrophy.—A rather widespread opinion exists that kidney involvement accompanying prostatic hypertrophy is due to back pressure from the bladder through the ureters. Physiologists very generally deny the possibility of such a reflux under normal conditions. Experiments on dogs (whose vesical architecture is very much like that of man), with the object of obtaining a reflux if reasonably probable, yielded no refluxes even under excessive intravesical pressures. Embryologic studies show a closely related origin of nephritic tissue and vesical trigone. Clinical data show a closely coordinated innervation of kidney, ureter and trigone, as indicated by the similarity of referred tenderness and pain in acute congestions and inflammations of these several viscera. The close adhesion of the trigonal tissue to the underlying prostate involves this portion of the bladder in disorders of the prostate. Experimental data indicate that electric stimulation of the proximal end of the cut hypogastric nerve affects the functional activity of the kidney. From these several findings the conclusion is drawn by Bush that uncomplicated kidney dysfunction, accompanying prostatic hypertrophy, is a condition primarily due to neural reflexes coming from the area of the trigone by way of the hypogastric afferents and then out through the eleventh and twelfth thoracic autonomics to the kidneys.

Diagnosis of Gonorrhea of Nervous System.—Green states that while the number of cases examined is as yet too small to permit the categorical assertion that this method of diagnosis is infallible, nevertheless, the inference is warranted that the complement fixation test as applied to the cerebrospinal fluid is a definite means of diagnosing gonorrhea of the nervous system. It is further probable that the same method can be applied in the case of other micro-organisms which invade the cerebrospinal system.

Uric Acid Content of Spinal Fluid.—The uric acid content of the spinal fluid was determined by Bernhard in fifty-one cases. In children the average uric acid was 0.78 mg., while in adults, the average was 0.54 mg. per hundred cubic centimeters of fluid. In chorea, the average uric acid was 0.78 mg. The sugar content was within normal limits. Syphilitics showed an average uric acid of 0.40 mg. In uremia, the uric acid as well as the other nonprotein nitrogenous constituents were markedly increased. In one case of congenital hydrocephalus, the uric acid was 1.48 mg. All cases of severe infection showed an increase in the uric acid content, while the sugar was decreased. The average concentration of uric acid in thirty-five cases was 22.1 per cent. of the blood concentration.

Cultivation of Tubercle Bacilli.—As a result of a long and extensive experience in cultivating human and bovine tubercle bacilli, it is recommended by Corper that the preferred method for isolating these bacilli from tissues and contaminated materials is Petroff's sodium hydroxid method, combined with seeding on the gentian violet egg medium. Recently isolated bacilli grow about equally well on egg, serum, blood and inspissated tissue mediums, and choice is made of the egg medium only on the basis of its ready access in the laboratory. Human bacilli do best when glycerol is added to these mediums while bovine bacilli prefer to grow without it. Laboratory strains of bacilli (after artificial cultivation of over a period of a year) grow equally well on glycerol agar and are preferably continued on this medium or, under special circumstances, on glycerol broth. Individual strains of bacilli reveal decided differences in growth ability on all mediums, which seems to be an inherent characteristic of the strain concerned. No method is available at present which will hasten the growth of the bacilli appreciably on these mediums,

provided it is recognized that the seeding plays an important part in the subsequent growth of the bacilli. Tubercle bacilli lose their viability after prolonged residence in the incubator or icebox and transfers should be made at monthly intervals to perpetuate them.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

24: 1-99 (Aug.) 1924

*Treatment of Lobar Pneumonia with Subcutaneous Injections of Pneumococcus Antibody Solution. R. L. Cecil and H. S. Baldwin, New York.—p. 1.
Sensitiveness to Drugs in Animals and Men. W. S. Van Leeuwen, Leiden, Holland.—p. 13.
Antagonism of Drugs. W. S. Van Leeuwen, Leiden, Holland.—p. 21.
Possible Explanation for Certain Cases of Hypersensitiveness to Drugs in Men. W. S. Van Leeuwen, Leiden, Holland.—p. 25.
*Control of Motility of Human Stomach by Drugs and Other Means. W. H. Dickson and M. J. Wilson, Toronto.—p. 33.
Relation of Dosage to Effect. L. F. Shackell, W. Williamson, M. M. Deitchman, G. M. Katzman and B. S. Kleinman, Cleveland.—p. 53.
*Pharmacology of Extracts of Posterior Lobe of Pituitary Gland. A. C. Kolls and E. M. K. Geiling, Baltimore.—p. 67.
*Diuretic and Antidiuretic Effect of Pituitary Extract and Suggestions for Subsidiary Test. W. G. Mackersie, Toronto.—p. 83.

Pneumococcus Antibody Solution for Pneumonia.—The subcutaneous administration of pneumococcus antibody solution early in the course of pneumococcus pneumonia appears to have a favorable effect on the death rate in Type I and Type IV cases and to a lesser extent in Type II infections. In cases of pneumococcus pneumonia treated by Cecil and Baldwin subcutaneously after the first forty-eight hours of the disease no beneficial effect is demonstrable, in any type.

Controlling Motility of Stomach.—Although the results obtained by Dickson and Wilson throw little light on the reputed favorable action of therapeutic doses of alkalies in cases of gastric distress, they do reveal an important relationship between the peristaltic activity of the stomach and changes in the acid base equilibrium of the body. Gastric peristalsis can be inhibited wholly or in part by violent exercise, by raising the carbon dioxid content of inspired air, and by very large doses of sodium bicarbonate. It is markedly increased by forced breathing and to a lesser extent by very large doses of ammonium chlorid. Evidence is presented by analysis of the alveolar air to show that changes in the tension of carbon dioxid in the arterial blood may be responsible for the inhibition or augmentation of the contractions in these cases. Gastric inhibition always follows excessive smoking, and sometimes the subcutaneous injection of epinephrin. Augmentation always occurs after the administration of coffee, whisky and strychnin in ordinary amounts, and after very large doses of magnesium oxid. Insulin very markedly increases gastric peristalsis. The pharmacologic action of therapeutic doses of the so-called alkalis remains obscure.

Pharmacology of Posterior Lobe of Pituitary Extracts.—Koll and Geiling's experiments showed that the intravenous administration of pituitary liquid causes a paling of the skin and of the visible mucous membranes, which is more marked in unanesthetized animals than under ether anesthesia. Apnea, with alternating periods of rapid shallow respiration, occurs as a constant phenomenon in the unanesthetized dog. Under ether, dogs show relatively little alteration in respiration. The circulatory changes following the administration of pituitary extracts into the unanesthetized dog are, briefly: (1) Rise of mean pressure, due chiefly to an increase in the diastolic pressure indicating increased peripheral resistance. The systolic level plays a subordinate rôle in these changes. (2) Decrease in pulse pressure. (3) Marked slowing of the cardiac rate. (4) Decrease in minute volume output of the heart. The output per beat may remain unaltered, or may show a lowering. (5) Cardiac dilatation as seen by the fluoroscope and roentgenograms. These changes indicate intense peripheral constriction of arterioles and capillaries, a fact verified by direct observation of blood vessels of the dog's ear. Slowing of the heart occurs after removal of vagal influence by the use of large doses of atropin sulphate, thus suggesting a direct action on the myocardium or a diminished coronary flow. Oxygen consumption is markedly reduced after pituitary extract injected into the unanesthetized animal. There is an increase in hemoglobin content of the blood for a brief period immediately after intravenous injection of pituitary liquid. In the etherized animal there is also an increase in the mean pressure, a rise in diastolic pressure, diminished pulse pressure and cardiac dilatation but less marked than in the case of the unanesthetized dog.

Diuretic and Antidiuretic Effect of Pituitary Extract.—Mackersie asserts that the immediate brief antidiuretic effect of pituitary when urine is collected from the bladder or the lower ureter is due either to a contraction of the smooth muscle of bladder or ureter, or secondly, with larger doses, to an effect on the kidney, possibly of a vascular character. The diuretic response is accompanied by a change in the distribution of water in the body but is not dependent solely thereon as hydremia outlasts diuresis. The antidiuretic effect requires larger doses than that sufficient to produce diuresis, but repeated small doses may sum in their effects. It is not proved that the antidiuretic effect is located elsewhere than in the kidney.

Michigan State Medical Society Journal, Grand Rapids

23: 323-348 (Aug.) 1924

Case of Acrodynia. D. E. Squiers, Kalamazoo.—p. 323.
Syphilitic Aortitis. W. H. Marshall, Flint.—p. 324.
Diagnostic Criteria of Duodenal Ulcer. J. G. Mateer, Detroit.—p. 329.
Fundamentals in Preventive Medicine. A. F. Fischer, Hancock.—p. 332.

New Orleans Medical and Surgical Journal

77: 107-140 (Sept.) 1924

Physician's Responsibility to Patient. E. L. Eggleston, Battle Creek, Mich.—p. 107.
Management of Third Stage of Labor. W. E. Levy, New Orleans.—p. 110.
Sphenopalatine Ganglion Neuralgia. L. S. Gaudet, Natchez, Miss.—p. 114.
Prevailing Grippal Infections Among Infants and Children. M. Loeber, J. E. Pollock and F. M. Dirmann, Jr., New Orleans.—p. 120.
*Ossifying Subperiosteal Hematoma. H. B. Gessner, New Orleans.—p. 121.
Anastomosis of Seventh and Eleventh Cranial Nerves to Correct Facial Paralysis. J. T. Nix, New Orleans.—p. 123.

Ossifying Subperiosteal Sarcoma.—In both of Gessner's cases it was the femur which was involved; in both there was a history of trauma, of considerable pain and swelling, and of a firm mass remaining at the end of a week. The diagnosis was based on the clinical history, on palpation, and on the roentgenogram.

South Carolina Medical Association Journal, Greenville

20: 187-214 (Aug.) 1924

Significance of Kidney Colic. M. Weinberg, Sumter.—p. 188.
Neonatal Care. W. Rhett, Charleston.—p. 191.
Pyelitis. W. H. Powe, Greenville.—p. 197.
Juvenile Board of Health. R. G. Beachly.—p. 199.

Southwestern Medicine, Phoenix, Ariz.

8: 357-400 (Aug.) 1924

Anesthesia and Anesthetics. W. V. Whitmore, Tucson.—p. 357.
Myocardial Degeneration. F. T. Fahlen, Phoenix.—p. 363.
Public Health. Z. Causey, Douglas, Ariz.—p. 368.
Medical Treatment of Peptic Ulcer: Sixty Cases. F. J. Milloy, Phoenix.—p. 374.
Extension Treatment of Supercondyloid Fracture of Humerus. I. L. Garrison, Phoenix.—p. 381.
Appendicitis During Pregnancy. V. M. Gore, Tucson.—p. 383.

West Virginia Medical Journal, Huntington

19: 393-448 (Aug.) 1924

Diseases of Circulation. A. Stengel, Philadelphia.—p. 343.
Adequate Surgery in Birth Canal Wounds. R. J. Reed, Wheeling.—p. 400.
Value of Day Book. C. H. Maxwell, Morgantown.—p. 406.
Postgraduate Medical Extension in West Virginia. M. L. Bonar, University.—p. 415.
Apparently Normal Appendix. C. A. Groomis.—p. 418.

Wisconsin Medical Journal, Milwaukee

23: 123-174 (Aug.) 1924

Radium for Nonmalignant Gynecologic Diseases. T. J. Watkins, Chicago.—p. 123.

Treatment of Ovarian Cancers with Combined Surgical and Radiologic Methods. H. Schmitz, Chicago.—p. 125.
End-Results in Treatment of Carcinoma of Cervix. R. S. Cron, Milwaukee.—p. 128.
Cancer from Standpoint of Otolaryngologist. F. J. Novak, Jr., Chicago. —p. 130.
Acute Intestinal Obstructions. D. R. Connell, Beloit.—p. 134.
Urologic Diagnosis. I. R. Sisk, Madison.—p. 139.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Radiology, London

29: 73-114 (March) 1924

Large Pure Uric Acid Renal Calculus. A. E. Barclay.—p. 73.
Injuries to Muscles and Joints and Their Treatment by Graduated Contractions. M. Smart.—p. 77.
Cranial Radiograph. R. Knox.—p. 92.
Prolonged Life for Coolidge Tube. O. A. Marxer.—p. 103.
Roentgen-Ray Treatment of Interstitial Keratitis. T. L. DeCourcy and J. H. Mather.—p. 105.

29: 115-156 (April) 1924

Radiographic Survey of the Normal Joints. St. J. D. Buxton and R. Knox.—p. 115.
Case of Displacement of Ilium of Sixteen Months Standing: Painless Reposition: Immediate Recovery. E. F. Cyriax.—p. 135.
Metabolic Changes Associated with Roentgen-Ray and Radium Treatment. E. C. Dodds and J. H. D. Webster.—p. 140.

29: 157-194 (May) 1924

Cranial Radiography. R. Knox.—p. 157.
*Case of Congenital, Right-Sided Diaphragmatic Hernia. R. A. Morrell. —p. 171.
On Skin Reactions to Radium Exposure and Their Avoidance in Therapy; An Experimental Investigation. J. C. Mottram.—p. 174.

Congenital Right-Sided Diaphragmatic Hernia.—In Morrell's case, although the hernia consisting of loops of small intestine was situated on the right side, the symptoms were always located on the left side of the abdomen and were described, vaguely, as discomfort and a sensation of dragging under the left costal margin. The dilated stomach appeared to be the chief cause of the patient's trouble. Lateral deviation of the spinal column was also present.

Bristol Medico-Chirurgical Journal

41: 97-164 (July) 1924

Therapeutic Uses of Radium. A. E. H. Pinch.—p. 97.
*Diverticulitis of Pelvic Colon. C. Gordon-Watson.—p. 112.
*Mechanical Obstruction Due to Passage of Gallstone Through Intestine. C. A. Morton.—p. 126.
Labyrinthitis. E. Watson-Williams.—p. 135.

Diverticulitis of Pelvic Colon.—Six cases are cited by Gordon-Watson to show that the clinical symptoms of peridiverticular fibrosis with stenosis are not easy to distinguish from those of carcinoma. Most observers lay considerable stress on the absence of blood, but Gordon-Watson does not place too much weight on this point. In three of the cases blood was occasionally noted in the stools. In his opinion the most important clinical distinction is the appearance of the patient. Patients with diverticulitis usually come with a long history of capricious actions of the bowels associated with pain and tenderness in the left iliac fossa, with periods of complete freedom from symptoms. They are well covered and do not complain of losing weight. There is no suggestion of "the shadow of malignancy" in their appearance. A tumor of considerable size may often be felt in the left iliac fossa. A carcinoma of the pelvic colon, on the other hand, is usually too small to be felt (except under an anesthetic with bimanual examination). Pain and tenderness in the iliac fossa are the exception in carcinoma. When there is marked inflammation in diverticulitis in addition to pain and tenderness there may be irregular pyrexia and leukocytosis and often irritability of the bladder.

Intestinal Obstruction from Gallstone.—Morton's patient, a woman aged 70, fell on the floor and very soon after severe pain commenced in the upper abdomen, extending down the sides. Vomiting began four hours later and soon it became fecal and very frequent. There was a history of epigastric pain and vomiting for some years. The abdomen was markedly and generally distended and universally tender, with areas of resonance and dulness. There was no rigidity. The extreme tenderness of the abdomen suggested peritonitis rather than a mechanical obstruction. On opening the abdomen, the peritonitis was seen to be widely diffused in the lower abdomen. In the upper abdomen was a mass of omentum fixed in the region of the gallbladder, which was lost in it. A large gallstone was found in a coil of small intestine. For obvious reasons it was not removed. The fecal character of the vomiting ceased about twelve hours after the operation. On the third day following the operation, as there had been no further action of the bowels and the abdominal distension persisted, Morton gave an intramuscular injection of pituitary extract, 1 c.c. This very quickly produced some sharp attacks of abdominal pain and within half an hour of the administration the patient passed half a pint of feces and some flatus. This was followed by a marked decrease of the abdominal distension and a cessation of the vomiting. She then had four spontaneous actions and passed more flatus. But even after this the abdominal distension again increased to a marked extent, and another injection of pituitary extract, 1.5 c.c., was given and was repeated every six hours; every injection was very quickly followed by a loose action. The patient had much griping pain in the abdomen, both with and without these injections. Four days later, after a small spontaneous loose action, she had much distress in the anal region and passed a gallstone which measured 1¼ inches by three-fourths inch. The abdominal distention subsided and progress was uninterrupted.

British Medical Journal, London

2: 259-304 (Aug. 16) 1924

*Tuberculous Cervical Glands. R. Davies-Colley.—p. 259.
Diagnosis of Malignant Disease of Large Intestine. H. Drummond.—p. 261.
*Two Cases of Rat-Bite Fever. W. T. Collier.—p. 265.
*Natural Duration of Cancer. W. S. Lazarus-Barlow and J. H. Leeming. —p. 266.
Splenectomy in Sporadic Acholuric Jaundice. E. J. Foulds.—p. 267.
Methods of Antenatal Clinic; Application to Private Practice. J. A. Willett.—p. 268.
Public Health Authorities and Cancer Problem. J. Hall-Edwards.—p. 275.
Echinococcus of Heart. D. Hynd.—p. 277.
Overdose of Hypnotics. R. W. Nichol.—p. 277.
Acute Edema of Cervix During Puerperium. T. J. L. Forbes.—p. 277.

Tuberculous Cervical Glands.—Davies-Colley believes that there is a tendency at the present time to teach that the nonoperative method of treatment of tuberculous cervical glands gives better results than the operative. He is entirely in disagreement with this view, and his main purpose in this paper is to endeavor to establish the case for early excision. He does not believe that tuberculous foci are destroyed by expectant treatment as completely as is generally taught. The advocates of expectant treatment, he says, draw too sweeping conclusions from the effects of nonoperative treatment of tuberculosis of the spine and joints and the bad results which operative surgery has given in both these situations in the past. If a radical operation could be devised which held out a hope of good functional result the tedious process of waiting for a natural cure would very soon become a thing of the past. With early tuberculous glands of the neck the case is entirely different. A complete excision of all infected tissue can be made without interference with function and brings with it a sense of security in the knowledge that no tubercles are left to infect other glands in the neighborhood. The dangers of expectant treatment are those which must inevitably arise from the constant presence of a tuberculous focus in any part of the body—that is, local spread of infection and suppuration, metastatic involvement of distant organs, and general tuberculosis.

Rat-Bite Fever.—In one of Collier's cases the disease was caused by the bite of a cat, and in the second the diagnosis was established by gland puncture during an afebrile period.

Duration of Cancer.—With a view to providing such controls for researches in cancer treatment in general, and treatment by radiations in particular, Lazarus-Barlow and Leeming have analyzed the records of the Middlesex Hospital over a period of forty years (1883-1922) and they here present the results of the inquiry in tabular form.

Calcutta Medical Journal

19: 773-812 (June) 1924

Seborrheic Dermatitis. G. Panja.—p. 773.
Pituitary Extract in Obstetrics. B. B. Bhattacharyya.—p. 784.
Enlarged Spleen in Bengal. M. M. Dutt.—p. 789.

China Medical Journal, Shanghai

38: 533-616 (July) 1924

Predisposing Causes and Prodromal Symptoms of Glaucoma. D. V. Smith.—p. 533.
Ectopic Gestation: Six Chinese Cases. R. M. Gibson.—p. 539.
Injuries to Urethra. D. Landsborough.—p. 546.
*Lupus Erythematosis, Telangiectatic. L. F. Heimburger.—p. 553.
*Staining of Spirochaeta Pallidum by Noguchi Method for Diagnosis of Syphilis. G. A. M. Hall and C. N. Frazier.—p. 558.
*Curious Asymmetry in Chinese Brain. G. Von Bonin.—p. 561.
China and Narcotics. W. H. G. Aspland.—p. 563.

Treatment of Lupus Erythematosus.—Heimburger says that in the treatment of his case he used a method which has probably not been used in this condition before, and although the reaction of the lesions to the treatment was marvellous, the ocular complications were severe. Iodoform, 0.065 gm. (grain 1), three times a day after meals, was given for five days, but it had to be discontinued because of the nausea and vomiting it produced. Locally, a lotion of calamine and zinc oxid was used throughout the patient's stay in the hospital. Intravenously, a sterile solution of grape sugar (50 per cent.) was given every other day, beginning with 16 c.c. and increasing by 2 c.c. at each injection. After the first four injections there was no local or general reaction, but after the fifth dose of 25 c.c. (12.5 gm. grape sugar) there was a sharp rise of temperature to 102 F. with nausea and vomiting, and the face became more swollen and tender. The glucose was discontinued, but the temperature still fluctuated between 101 and 103.4 F. The left eye was much swollen, a little pus oozed out between the lids, and there was decided tenderness over the eyeball and at the margin of the orbit, especially at the outer margin. The blood showed a leukocytosis of 18,200, with an increase in the polymorphonuclears to 85 per cent. The blood culture was negative. Hot boric packs were applied to the affected eye hourly, and a solution of argyrol (25 per cent.) was instilled between the lids. In two days the temperature returned to normal and remained so for five days; an injection of 20 c.c. of the grape sugar solution was again given and there was no rise in temperature. On the following two days the temperature was only slightly abnormal (99.4 F.). Afterward the patient complained of a heavy feeling in the left eye; the lids were swollen and edematous. Hot boric packs were applied as before, but there was no improvement either in the ocular symptoms or the temperature. Later it was noticed that the left eyeball protruded slightly, the pupil was widely dilated, and there was no retinal reflex. Enucleation was performed two days later. On the afternoon preceding the enucleation, spasmodic contractions of the left trapezius muscle were noticed. These became more frequent and intense during the night, until by the morning the whole left arm and shoulder were involved. After enucleation of the eyeball the twitchings and contractions gradually involved the left leg, and finally the right shoulder. The patient was taken home because his condition seemed hopeless. Pathologic examination of the enucleated eyeball showed, microscopically, a perforated ulcer of the cornea with concomitant signs. Immediately behind the eyeball and surrounding the optic nerve was a mass of granulation tissue which showed on microscopic examination increase of connective tissue with a profuse round-cell infiltration.

Diagnosis of Syphilis.—Hall and Frazier have used Noguchi's method of staining smears in the diagnosis of twenty-five cases of syphilis and in each case a diagnosis of syphilis could have been made from these smears alone with the expenditure of a very little time. In this respect the method compares very favorably with the dark-field method which was used as a parallel in all of the cases.

Asymmetry of Chinese Brain.—It has been pointed out by Gans that the ascending parietal gyrus of the human brain is asymmetrical in so far as the left gyrus is better developed and broader than the right one. This asymmetry was found in European brains. Later, Gans reported that he found just the reverse in three Chinese brains, the right ascending parietal gyrus being the broader one. Bonin examined the brains of two Chinese and was able to corroborate Gans' statements. The right precentral gyrus was found to be broader and showing a more detailed moulding of its surface than the left. But this curious asymmetry is apparently not confined to the postcentral gyrus; it holds good for the ascending frontal gyrus as well. The difference between the right and left side in the transverse temporal gyrus (Heschl's gyrus), though not so marked, was still perceivable.

Indian Medical Gazette, Calcutta

59: 325-376 (July) 1924

Dysenteries of India. H. W. Acton and R. Knowles.—p. 325.
Variability of Rabbits in Assay of Insulin. J. P. Bose and H. W. Acton.—p. 336.
*Toxicity of Emetin. R. N. Chopra, B. N. Ghosh and P. De.—p. 338.
Squamous Cell Carcinoma Due to Kangri Burn. E. F. Neve.—p. 341.
Scarlatina in Indians. C. A. Sprawson.—p. 344.
Case of Renal Glycosuria. J. P. Bose.—p. 345.
Condylomatous Tumor of Lip. A. G. Tresidder.—p. 346.
Intravenous Iodin Injections in Plague. R. D. Pal.—p. 348.
Case of Double Hernia. K. M. Nayak.—p. 348.
Fibroma of Orbital Fossa. B. B. Mallick and P. C. Gupta.—p. 349.
Case of Rupture of Aortic Aneurysm. J. R. Jacob.—p. 350.
Zinc Ionization in Eczema of Auditory Canal. K. N. Pradhan.—p. 350.

Toxicity of Emetin.—Experiments made by Chopra et al. show the serious consequences of giving a large number of injections of emetin indiscriminately. Emetin is a general protoplasmic poison having a selective action on the cells of certain organs in the rabbit. The parenchyma of the heart muscle is one of the earliest to be affected, the changes being (*a*) cloudy swelling of the muscle fibers and disappearance of transverse striation; (*b*) shrinking of the muscle fibers; (*c*) atrophy of fibers and their replacement by connective tissue cells. These may be the cause of some of the cardiac symptoms which occur in the course of injections in patients. The presence of petechial hemorrhage at the site of injection and in other organs shows that emetin has a selective action on the endothelium of the capillaries. The liver and kidneys are also affected later, the changes being chiefly congestion and fatty infiltration of the parenchyma. A smaller number of injections are required to cure the disease if these are combined with large doses of bismuth subnitrate or carbonate by mouth.

Indian Medical Record, Calcutta

44: 193-224 (July) 1924

Lathyrism. G. N. Mukerjee.—p. 193.
Epidemic Dropsy. K. Ch. Dutt.—p. 198.

Japan Medical World, Tokyo

4: 165-192 (July 15) 1924

Experimental Study of Complement Deviation with Opsonin. Y. Kusama.—p. 165.
Theory of Wassermann Reaction with Special Reference to Analogous Specific Reaction Between Heterophile (Forssman) Antibody and Tissue Lipoids. T. Taniguchi.—p. 172.

Journal of Oriental Medicine, Dairen, South Manchuria

2: 125-207 (May) 1924

*Albumin-Free Bacteriophage. T. Suzuki.—p. 125.
Chemical Composition of Lens of Eye of Cattle; Especially Extractives. T. Ikeda.—p. 135.
*Child Welfare in Manchuria. Rickets in Breast-Fed Infants. T. Suzuki.—p. 142.
*Estimation of Calcium Content in Blood Serum of Mothers Nursing Infants Having Rickets. K. Imai.—p. 174.
*Blood Findings in Infant Rickets in Manchuria. K. Kaneko.—p. 177.
*Chlorid and Fat Content in Milk of Mothers Nursing Infants Having Rickets. M. Umemori.—p. 179.
*Tetany in Dairen. T. Suzuki.—p. 181.
Experimental Lead Poisoning. S. Nagatsuka.—p. 187.
*Condensation of Ninhydrin with Indoxyl. M. Tomita.—p. 189.
Influence of Medicaments on Velocity in Sedimentation of Red Blood Corpuscles. S. Hara.—p. 191.
Calcium Content of Spinal Fluid in Children. K. Imai.—p. 195.
*Statistical Information on Heredity. K. Tsuda.—p. 197.
Hydronephrosis Caused by Urinary Calculus. I. Ogata.—p. 199.
Pyelography. H. Yanagihara and T. Miyata.—p. 202.

Albumin-Free Bacteriophage.—The albumin-free bacteriophage prepared by Suzuki is said to kill dysentery bacilli after more than ten hours. By intravenous injection it can

go right through to the lungs, spleen, liver, bile, and from there through the alimentary canal. Its presence is strongest in these organs after one hour. After three hours it can still be found in the liver and spleen, but after twenty-four hours it disappears from the system. By subcutaneous injection the bacteriophage can go directly from the blood stream to the lymph vessels and from there to the lungs, spleen, kidneys, liver and bile, then to the duodenum, small intestine, cecum, large intestine and rectum, and when it has a strong activity it can be present in all these organs for three hours. By administration per os the albumin-free bacteriophage appears after fifteen minutes in the lungs, spleen, stomach, duodenum and small intestine and after thirty minutes in the cecum and rectum only. Suzuki believes that this preparation will be of great value in the treatment of dysentery in children.

Rickets in Manchurian Infants.—Among 1,375 infant cases of rickets analyzed by Suzuki, 116, or 8.4 per cent., showed craniotabes. There were only six cases in which any such sign was found during the first month of the infant's life. During the second month the number increased to thirty-one cases. The disease was most prevalent among infants fed on mother's breast milk only, 70 per cent. of all the cases. Infants fed on artificial foods constituted only about 13 per cent. of the total number of cases. Suzuki is of the opinion that the continual use of the water containing a high percentage of chlorids may have some influence on the mother's milk, and so be able to explain the great prevalence of infant rickets in some sections. There seems to be no other way of accounting for cases of the disease.

Blood Calcium of Mothers Nursing Infants Having Rickets.—Imai's studies show that there is a slight decrease in the amount of calcium in the blood serum of mothers who are feeding infants suffering from rickets as compared with mothers feeding infants suffering from other diseases as well as when compared with normal, healthy children. But the decrease is very slight, especially when compared with the tetany cases.

Blood Findings in Rickets in Manchuria.—In infantile cases of rickets found by Kaneko in Manchuria, the hemoglobin content is the same as usual. The red blood corpuscles are slightly decreased in number. The hemoglobin index is 0.86. The number of leukocytes was the same as in normal conditions. The neutrophil polymorphonuclear leukocytes show a slight decrease, even though this decrease is but slight. The small leukocytes, on the other hand, were relatively increased in number. Thus, as a general rule, it is possible to trace a slight anemia in this disease.

Fat Content of Milk of Mothers Nursing Infants with Rickets.—Umemori found that in cases of rickets, the fat content in the mother's milk is the same as under normal conditions, i. e., from 3 to 4.5 per cent.

Tetany in Dairen.—Suzuki believes that there is a clinical relationship between tetany and rickets. He reports two cases of tetany occurring in Dairen where rickets is very common.

Condensation of Ninhydrin with Indoxyl.—Tomita added ninhydrin to indican urine and got as a result a deep red colored substance. This test is regarded as being a new one for detecting the presence of indican in the urine. A small amount of lead acetate solution is added to about 20 c.c. of urine, the resulting color being dispersed by the addition of lead acetate. This mixture is filtered, and to 10 c.c. of the filtrate is added 1 c.c. of hydrochloric acid (if any precipitate appears here, it should be filtered again). To this solution a few drops of 5 per cent. ninhydrin are added and boiled. The presence of indican is shown by a beautiful red color.

Heredity of Disease.—Tsuda examined the record cards of 19,390 outpatients, with reference to the possibility of "inheriting" certain diseases. His figures of inheritance are as follows: Tuberculosis, 27 per cent.; 9 per cent. of asthma families transmit asthma to their children. Thirty-two per cent. of asthma children show asthma in the family. Syphilis, 34 per cent.; gonorrhea, 11.3 per cent.; consanguinity, 6.1 per cent.; mental diseases, 4.5 per cent.

Medical Journal of Australia, Sydney

2: 25-50 (July 12) 1924

*Antenatal Supervision. F. B. Craig.—p. 25.
Some Abdominal Conditions in Children. R. B. Wade.—p. 28.
*Treatment of Feebleminded in Great Britain and America. R. A. Noble.—p. 31.
*Unusual Case of Edema. V. J. Kinsella.—p. 36.

Antenatal Supervision.—Craig feels that every pregnant woman should be educated to expect a systematic antenatal examination at least in her first pregnancy and also supervision in the last two months of every subsequent pregnancy.

Treatment of Feebleminded.—Noble urges that psychiatric clinics be established at all larger public hospitals to assist parents, teachers and law courts in their difficult problems and to act as feeding centers for the special schools. Traveling clinics could attend at the country centers. Social service activities should be organized in conjunction with the clinics and the special schools, in order to help the parents and teachers of such feebleminded children as are not in need of institutional care. The Red Cross society with its extensive organization might well cooperate in this work. The juvenile courts should have access to psychiatric clinics for guidance with their delinquent individuals. The intelligent use of segregation should be encouraged. The more thoroughly segregation can be carried out, the more thoroughly can the whole problem be dealt with. Educate public opinion to accept an effective plan for the proper education and care of the feebleminded members of the community and for the elimination of feeblemindedness as far as this is practicable.

Severe Edema.—Kinsella relates the case of a man, aged 63, who complained of weakness in the legs and back, loss of appetite and shortness of breath. He had lost a great deal of weight, had slight frequency of micturition (twice at night), but no difficulty and no pain with the act. The most striking feature on examination was tremendous edema of his feet and legs. There was no tenderness or swelling along the course of the veins in the legs. The weakness and edema were not cardiac; nor due to anemia (as shown by a blood count). There was peripheral neuritis and renal inefficiency. The blood pressure was moderate and the blood urea was well within normal limits. The progress made by the edema definitely excluded from the diagnosis local conditions obstructing the venous return. In spite of rest in bed, salt-free diet, restriction of fluid and bandaging of the legs the edema made steady headway. The legs were tremendously swollen below the knee, thin and wasted in the immediate neighborhood of the buttocks and proximal part of the thighs. Huge ridges of edematous tissue formed on the patient's back, corresponding with the depressions between the pillows on which he lay. Ascites was present. Finally the scrotum became edematous and in two days assumed the form of a big smooth translucent sphere about 15 cm. (6 inches) in diameter. The patient's general conditions got worse and he gradually sank and died eight weeks after admission. At the postmortem examination, it was found that the right lung was adherent to the pleura over its whole surface. These adhesions were particularly dense at the base. In attempting to separate the lung from the diaphragm, the latter was torn and an opening made directly into a large subphrenic abscess lined by thick walls, crossed by leashes of fibrous tissue bearing blood vessels and so resembling a chronic phthisical cavity. This abscess was the remains of the right kidney. It was completely shut off from the ureter and immovably fixed to surrounding structures. No vestige of renal substance remained. The left kidney was greatly enlarged and "apparently perfectly healthy except that the capsule showed a few adhesions." It had evidently hypertrophied and efficiently carried out the renal functions without the help of its fellow.

Archives de l'Institut Pasteur de Tunis

13: 155-241 (June) 1924

*Transmission of Kala-Azar. C. Nicolle and C. Anderson.—p. 155.
*Neurovaccine. E. Burnet and E. Conseil.—p. 165.
Experimental Melitensis and Abortus Infection of Rodents. Burnet and de Lagoanère.—p. 182.
Transorbital Inoculation. P. Remlinger and P. Bel.—p. 192.
Prowazek Inclusions in Trachoma. U. Lumbroso.—p. 203.
*Typhus and the Proteus X. F. Breinl.—p. 208.

*Pneumonic Plague. C. Nicolle and E. Gobert.—p. 212.
Xeroderma Pigmentosum in Tunis. Junès et al.—p. 226.
Bacterial Flora of Warm Mineral Waters. P. Remlinger.—p. 233.

Transmission of Kala-Azar.—Nicolle and Anderson confirm their previous statements exonerating the flea in the transmission of kala-azar. Dogs bitten continually during ten months by fleas from other dogs with severe kala-azar failed to develop the disease, as also dogs fed for more than three months with infected fleas.

Neurovaccine.—Burnet and Conseil comment on the value of Levaditi and Nicolau's neurovaccine for experimental study of vaccine problems, on account of its purity. They reject it for clinical use as it is liable to induce necrotic pustules and diffuse vaccinia in man, with a severe reaction, while it does not offer any special advantages.

Typhus and Proteus X.—Breinl is convinced that the causal agent of typhus is in an invisible form in the human disease but takes the visible form of *Rickettsia prowazeki* in the infected louse. To show up the human causal agent, we must use culture mediums different from those now in vogue.

Pneumonic Plague.—Nicolle and Gobert have had opportunity to study several foci of pneumonic plague recently in Tunis. They assert that bubonic and pneumonic plague are two distinct and independent entities. Bubonic plague is transmitted from rat to man and only rarely from man to man. This form causes isolated cases in different ports but then dies out without entailing epidemics. The pneumonic form affects the lungs from the start, is almost invariably fatal, and has no buboes and no connection with rat plague, but is extremely contagious from man to man. This was the Manchuria plague form, and it has appeared in northern Africa in several small epidemic foci; in Tunis, since the influenza epidemic of 1918. It is not confined to ports; some of the foci border on the desert and have an ancient history of contamination. They are inclined to consider pneumonic plague as the result of association of the plague bacillus with the influenza virus.

Bulletin Médical, Paris

38: 927-946 (Aug. 23) 1924

*Pneumothorax in Children. P. F. Armand-Delille.—p. 933.
Chronic Posttraumatic Asthenia. R. Benon.—p. 934.

Therapeutic Pneumothorax in Children.—Armand-Delille is in charge of the observation station at the Debrousse Hospital at Paris, and 500 children with pulmonary tuberculosis have passed through his hands in the last two years. Of this number only fifty presented favorable conditions for pneumothorax treatment, and three seem to have been completely cured by this means, after two years of compression. Benefit was manifest in all. Fully 50 or 75 per cent. of the twenty-three with compression for a year or more would have been dead by this time if it had not been for the pneumothorax. In twelve the disease seems to have been completely arrested. In three others, after compression for fifteen months or two years, the old focus flared up again. In ten other cases an effusion formed five or six months after cessation of the compression; to prevent adhesion of the sheets of the pleura, a medicated oil was injected. This has prevented further effusion and the general health is good, but the prognosis is reserved. The children were all kept in the institution, and heliotherapy was applied.

Comptes Rendus de la Société de Biologie, Paris

91: 613-784 (Aug. 12) 1924. Partial Index

*Secondary Infection in Cancer. J. Lavedan.—p. 619.
*Breaking Up Associations of Microbes. Weinberg and Ginsbourg.—p. 623.
*Calcium Chlorid in Heart Disease. M. Petzetakis.—p. 645.
Coagulation in Fresh Milk. N. L. Cosmovici.—p. 649.
*Kidney Perfusion Fluid. C. Richet, Jr., and Gournay.—p. 657.
*Vaccine Treatment of Pneumonia. E. Weill and A. Dufourt.—p. 687.
*Botulinus Toxin Skin Reaction. V. De Lavergne.—p. 689.
*Sodium Citrate and Elimination of Water. V. de Moraczewski.—p. 702.
*The Ammonia in the Blood. J. K. Parnas and J. Heller.—p. 706.
*Colloidoclasis and Blood Pressure. Kmietowicz and Koskowski.—p. 710.
*Flocculation Tests. J. Wegievko.—p. 717.
*Local Serum Reaction. H. Brokman and M. Prokopowicz.—p. 719.
*Cholesterol in Normal Children. Banu et al.—p. 730.
*Immunization by the Mouth. D. Combiesco and G. Calalb.—p. 734.
*Imagination in Aphasia. Noica.—p. 747.
*Pernicious Anemia. C. Bacaloglu and G. Tudoran.—p. 759.
*Osmosis in Trachoma. J. Nitzulescu and E. Lazarescu.—p. 760.
Thyroidectomy in Geese. C. I. Parhon and C. Parhon, Jr.—p. 765.
*The Tonus in the Insane. L. Ballif and H. Rosen.—p. 767.
*Personnel in Radiologic Institute E. Rud.—p. 775.
*Uremia in Tubular Nephritis. J. Frandsen.—p. 777.

Blood Changes in Cancer with Secondary Infection.—Lavedan found in three instances of an ulcerative cancer, with secondary infection, leukocytosis and hyperpolymorphonucleosis, which disappeared as the secondary infection subsided under treatment.

Cataxia in Treatment of Putrid Infections.—Weinberg and Ginsbourg's opinion is that the putrefaction, which is produced by an associated action of two or several microbes, may be arrested by checking the action of one of the micro-organisms, thus breaking the morbid chain. They call this procedure cataxia, from the Greek term for dissociation. Cataxia can be induced in a putrid infection, such as gangrene of the lung or fetid bronchitis, by means of a specific antiserum or arsenical treatment. Serotherapy and vaccination may have this same cataxia effect in nonputrid infections.

Calcium Chlorid in Heart Disease.—Petzetakis' research showed the dose of from 0.5 gm. to 1 gm. of calcium chlorid in 10 per cent. solution to be an actual heart tonic. He used it in intravenous injections in absolute arrhythmia, in extrasystoles, in arrhythmia from tachycardia. A favorable effect was also manifest on subjective symptoms, such as distress, dyspnea, palpitations, etc.

Action of Fluid from Renal Perfusion.—Intravenous injections of the fluid exerted a diuretic action. Chloriduria and azoturia were also increased. The renal cell had evidently become more permeable.

Vaccine Treatment in Bronchopneumonia.—Weill and Dufourt have treated bronchopneumonia in infants in the last two years with a multivalent vaccine of the pneumococcus, enterococcus, staphylococcus and tetragenus. Of the forty-one infants, thirty-six recovered. The action of the vaccine is more pronounced in primary pneumonia, than in pneumonia secondary to an infectious disease, measles, diphtheria or whooping cough which seem to create a relative vaccine anergy.

Skin Reaction in Botulism.—DeLavergne tried to produce a botulin reaction, to make evident the presence of the antitoxin in the blood. Intracutaneous inoculation of botulinus toxin A and B did not cause any local inflammation, and consequently a reaction, similar to the Schick test, was not obtained. An antitoxin did not appear during or after botulinus poisoning.

Action of Sodium Citrate on Elimination of Water.—Moraczewski states that sodium citrate caused in the rabbit retention of water, while the action of sodium rhodanid, which is on the other end of Hofmeister's series, was the reverse. It may be assumed that the action of sugar and fats on the human organism is similar to that of the citrate, and of albumins to that of the rhodanid.

Ammonia in the Blood.—Parnas and Heller use a special method for measuring the ammonia in blood. They say that the amount is an exact index of metabolism of proteins.

Colloidoclastic Shock and Blood Pressure.—Experiments on dogs convinced Kmietowicz and Koskowski that the phenomena of a colloidoclastic shock are not produced by a decrease in blood pressure. Also that the second phase of the shock, secondary leukocytosis, is not connected with an increase of pressure, and may occur while the vessels are still dilated to the utmost.

Flocculation Test in Different Diseases.—Wegievko asserts on the basis of 100 cases, that the flocculation test is negative in normal subjects, and is positive in advanced pulmonary tuberculosis, pneumonia, acute rheumatism and in nephrosis. The test is also negative in diabetes and in disturbances of the liver.

Susceptibility of the Skin to Serum from Different Species.—Brokman and Prokopowicz injected subcutaneously 0.1 c.c. of goat serum daily in children. All the different points inoculated developed, six days after the first injection, a local urticaria reaction. A second inoculation induced the urticaria after twenty-four hours. The experiment showed

the pseudoglobulin to be the strongest antigen, producing by itself the reaction. The euglobulins as well as the albumins take no part in the reaction. The result was positive in fifty-three of the fifty-five inoculations of goat serum and in nineteen of the forty-two with horse serum, but it was strictly specific for each serum.

Cholesterol in Infants.—Banu, Negresco and Heresco claim that the amount of cholesterol in the blood serum of infants is lower than in the adult, owing to the food and the growth in infancy.

Staphylococcus Vaccination by Mouth.—Combiesco and Calalb performed antistaphylococcus vaccination by mouth in rabbits which had been sensitized with bile. The vaccination was as effectual as when made subcutaneously, intracutaneously, or on shaved skin.

Imagination in Aphasia.—Noica noticed a loss of the representative imagination in sensory aphasia, while the imagination was preserved in motor aphasia, in which the memory of things perceived by vision is not disturbed.

Plastic and Aplastic Anemia in Syphilis.—Bacaloglu and Tudoran emphasize that cryptogenic pernicious anemia is frequent in subjects with latent syphilis. Three patients recovered rapidly after intensive treatment with mercury and arsphenamin. In one case, with characteristic changes in the blood, a complete recovery followed in a month, and the patient was still in good health ten years later, except for syphilitic aortitis. Another case was an aplastic anemia, which is considered as extremely grave, but complete recovery followed the specific treatment.

Osmotic Resistance in Trachoma.—Nitzulescu and Lazarescu noted that the resistance of the blood corpuscles to hypotonic solutions is the same in trachoma as in healthy subjects.

Changes of Vagosympathetic Tonus in the Insane.—Ballif and Rosen's intravenous injections of 2 mg. of atropin in thirteen insane revealed that a vagotonic patient may, after from several days to several months, become sympatheticotonic. The change in tonus was not accompanied by any apparent psychic manifestations.

Blood of Workers in Radiologic Institutes.—Rud's examination of persons employed in such institutes proved the amount of hemoglobin and the erythrocyte count to be normal. The leukocytes averaged about 1,000 below normal. The blood platelets were unchanged, as well as the osmotic resistance of the erythrocytes.

Uremia in Tubular Nephritis.—Frandsen observed a normal secretion of water in rabbits affected with chronic tubular nephritis. The secretion of chlorids and of nitrogen was decidedly disturbed, and therefore ingestion of nitrogen beyond the secretory capacity would produce uremia. It may be presumed that also in man uremia is produced by tubular changes in the kidneys.

Journal de Médecine de Bordeaux

101: 655-688 (Aug. 10) 1924

Hydatid Cysts in the Liver. H. Verger et al.—p. 655.
*Generalized Ulcerative Sarcomatosis. Jeanneney and Mathey-Cornat.—p. 657.

Generalized Ulcerative Sarcomatosis.—In the case of Jeanneney and Mathey-Cornat a small sarcoma started to ulcerate after a local trauma the second year, and it produced metastases over the trunk. The metastases were situated around the primary lesion at first and predominantly, and the axillary as well as the inguinal and abdominal glands became involved.

Lyon Médical

134: 165-206 (Aug. 10) 1924

*Necropsy Findings in Angina Pectoris. L. Gallavardin.—p. 165.

Necropsy Findings in Angina Pectoris.—Gallavardin states that necropsy confirmed the lesions in the coronary arteries which had been assumed during life in ten of the fifteen cases of angina pectoris described. In the five other cases the coronaries could not be incriminated. In the group with coronary lesions, two were known to be syphilitic, as also one in the other group. Chronic nephritis was noted in the others, or pulmonary tuberculosis.

Paris Médical

137-152 (Aug. 16) 1924

Psychotherapy in Dispensaries. Mignard and Minkowski.—p. 137.
Malaria and Cirrhosis of the Liver. P. Millous.—p. 141.
The Medical Officer on Merchant Ships. M. Clerc.—p. 147.

153-164 (Aug. 23) 1924

*Insufficiency of the Diaphragm. G. Rosenthal.—p. 153.
Kala-Azar in Children. R. Jemma.—p. 155.
*Cultivation of Malarial Plasmodia. Markovitch.—p. 159.

Treatment of Insufficiency of the Diaphragm.—Rosenthal considers the syndrome of diaphragmatic insufficiency as primary. The disturbance may sometimes be associated with a nasal lesion, or peritoneal inflammation, as in salpingitis, chronic appendicitis. He mentions a pseudo-insufficient respiration due to a nervous condition and general weakness. A detailed description is given of the treatment, which consists in exercise of the diaphragm, combined sometimes with air baths and sun therapy.

Cultivation of Malarial Plasmodia According to Bass.—Markovitch adopted Bass' method, but uses as optimal temperature 37 C. instead of from 40 to 41 C. While Bass obtained the development of three generations in thirty hours, his experiments required over forty-eight hours for two generations. The experiments showed the attack by the parasites on the healthy erythrocytes in vitro.

Presse Médicale, Paris

32: 673-680 (Aug. 13) 1924

Laënnec's Thesis, 1804. M. Letulle.—p. 673.
Medical Applications of Arsonvalization. N. Auguste.—p. 676.

32: 681-688 (Aug. 16) 1924

Interpretation of Insufficiency of the Right Ventricle. C. Laubry, D. Routier and R. Largeau.—p. 681.
*Conical Resection of Uterine Cervix. G. M. Radoulovitch.—p. 684.
Transfusion of Blood. R. Benda and R. Le Clerc.—p. 686.

Conical Resection of Uterine Cervix.—Radoulovitch has reexamined recently three of the ten patients—none under 40—treated for endocervicitis, over three years ago, by Sturmdorf's method of cutting a cone out of the cervix. The outcome was so excellent that he intends to apply the method in future even to young women.

32: 689-696 (Aug. 20) 1924

*Chronic Nephritis Without Hypertension. G. Laroche and A. Desmoulière.—p. 689.
*Tracheofistulization. G. Rosenthal.—p. 691.

Chronic Nephritis Without High Blood Pressure.—Laroche and Desmoulière observed fourteen cases of chronic nephritis with azotemia and either without hypertension, or with permanent hypotension. Hypertrophy of the heart was not manifest. Nervous disturbances were frequent, as the nervous tissue is particularly sensitive to the uremic poison. The diagnosis is based on the examination of the blood. The azotemia is generally moderate; the Ambard coefficient is high. The amount of uric acid in the blood ranged from 0.007 to 0.015 per cent., reaching 0.028 in one case. The disease is often connected with old or congenital syphilis.

Technic for Tracheofistulization.—Rosenthal describes, with numerous illustrations, the needles and the cannulas, and the technic in general for puncturing or intubation of the trachea, which he has been perfecting for twenty years. He emphasizes that intratracheal medication should be employed for vasoconstriction in hemoptysis, for supplying oxygen in grave dyspnea in heart disease, in asphyxia, and in tuberculous laryngitis treated with the galvanocautery. With grave bronchopneumonia and bilateral gangrene of the lung, he insists it should be the routine procedure, like lumbar puncture in meningitis.

Revue Médicale de la Suisse Romande, Geneva

44: 417-480 (July) 1924

*Ulcer Versus Cancer. C. Roux.—p. 417.
Generalized Fibrous Osteitis in Woman Aged 36. Machard.—p. 440.
Unsuspected Syphilis. J. Golay.—p. 449.
Contraindications for Artificial Pneumothorax. Fischer.—p. 457.
Subcutaneous Injection of Cod Liver Oil. Francken.—p. 463.

Differential Diagnosis of Ulcer and Cancer.—Roux reproduces sixty-eight fluoroscopic outlines of the pylorus-

subhepatic crossroads, the patients standing. Among the points to which he calls attention are the frequent early adhesion of the stomach to the pancreas in cases of ulcer, pulling the stomach into the shape of an inverted L. Cancer does not form these early, active, organ-displacing adhesions. With simple ptosis, the stomach retains its J or fishhook shape, to the left of the umbilicus. Cancer of the pylorus averaged fifteen to eighteen months' duration before the patients reached the surgeon; with other gastric cancers, the intervals averaged much longer. Displacement of the pylorus toward the right suggests ulcer in the pylorus or duodenum, the cicatricial shriveling of the resulting early adhesions pulling the pylorus toward the one fixed point in the region, the hilus of the liver. This keeps close to the diaphragm. He warns to distinguish a casual sagging into the right side from active, continuous traction on the pylorus. The adhesions pulling the pylorus into the right side may have their source in an inflammatory process around the biliary ducts, even when the gallbladder itself does not show much disturbance. He regards this surrounding inflammatory process as the gravest complication of cholelithiasis, aside from perforation. Displacement of the pylorus toward the right may be the only sign of it for a time.

Schweizerische medizinische Wochenschrift, Basel

54: 741-760 (Aug. 14) 1924

*Danger of Iodin Treatment. O. Roth.—p. 741.
Psychotherapy. L. Schwartz.—p. 743.
*Warts. Bonjour.—p. 748.
Psychogalvanic Reflex. F. Kübler.—p. 751.

Danger of Iodin Treatment.—Roth's patient showed repeatedly an enlargement of the thyroid during pregnancy. The gland retrogressed in size after delivery—at least once under iodin treatment. Later she took four tablets of iodostarin within one month. Acute symptoms of exophthalmic goiter developed, and the young woman died after another month.

Warts.—Bonjour believes that warts are due to psychic causes, that he cured them by suggestion within one to five weeks, and that the popular procedures act in the same way.

54: 761-784 (Aug. 21) 1924

Roentgen-Ray Treatment of Eye Tumors. P. Knapp.—p. 761.
*Correction of Homonymous Hemianopia. J. Strebel.—p. 764.
*Double Kidney. A. Müller.—p. 767.
*Epinephrin and Synergism. N. Seifert.—p. 773.
Congenital Syphilis of Lymph Glands. H. Kurz.—p. 776.

Correction of Homonymous Hemianopia.—Strebel prescribes in homonymous hemianopia prisms of from 5 to 7 degrees with the base on the blind side.

Double Kidney.—Müller reports a new case of double kidney, and mentions two others. The patient was a girl, 12 years of age, with pyuria causing a vulvovaginitis. The urine in the bladder was clear. The opening of the third ureter was found with considerable difficulty in the urethra, and the third hydronephrotic kidney was removed. He emphasizes that such congenital malformations are a point of predilection for infections.

Epinephrin and Synergism.—Seifert registered the contractions of surviving arteries after addition of lead acetate. Epinephrin increased and prolonged its action. She found, afterward, about twice as much lead in such strips as when using lead acetate alone.

Policlinico, Rome

31: 1033-1063 (Aug. 11) 1924

*The Cremasteric Reflex. A. Giglio.—p. 1033.
*Source of Error in Colloidal Gold Test. C. Agostini.—p. 1036.
Associated Malaria and Malta Fever. F. Lo Presti-Seminerio.—p. 1036.

Cremasteric Reflex as Aid in Diagnosis.—Giglio has noticed a spontaneous retraction of the testis on the same side, with each inspiration, as a practically constant symptom of injury or inflammation in the two upper quadrants of the abdomen. If not spontaneous, it can be induced, but the phenomenon was never observed for more than the first few hours of acute peritonitis in this region. It aids in diagnosis and in localization of the lesion.

Source of Error in Colloidal Gold Test.—Agostini warns that cerebrospinal fluid containing much glucose is liable to give a positive response in the first two dilutions, even in the absence of syphilis.

Riforma Medica, Naples

40: 745-768 (Aug. 11) 1924

*Endotracheal Treatment. N. Parise.—p. 745.
Digestive Leukocytosis and the Spleen. G. Mirabile.—p. 747.
Retroperitoneal Hydatid Cyst. G. Cavina.—p. 749.
Sea-Coast Sanatoriums. V. Marconi.—p. 752.
*Duodenal Ulcer After Burns. F. Ronchese.—p. 753.
Meningococcemia. I. Jacono.—p. 755.

Endotracheal Treatment.—Parise recommends intratracheal injections in pulmonary gangrene, putrid bronchitis and similar conditions.

Duodenal Ulcer After Burns.—Ronchese reports the history and necropsy findings of a young woman who had been severely burned (burns up to the third degree). She had hemorrhage from the bowel the twelfth day after the accident, and another on the fourteenth which proved fatal. Necropsy revealed congestion of the small intestine and recent ulcers in the descending part of the duodenum. He believes that the causal relation of the burns to the ulcers is doubtful. He saw them only once in 348 burned persons.

Brazil-Medico, Rio de Janeiro

2: 29-46 (July 19) 1924

Nonsuppurating Keratitis. Abreu Fialho.—p. 29.
Recent French Medical Publications. Desaux.—p. 40.

2: 47-66 (July 26) 1924

*Epidemic of Food Poisoning. O. B. de Couto e Silva.—p. 47.
*Prophylaxis of Leprosy in Para District. H. C. de Souza Araujo.—p. 48.
Epiphora from Eversion of Lacrimal Points by Pressure from Eyeglasses. Campos.—p. 51.
Secondary Cataract. G. de Andrade.—p. 53.

Food Poisoning.—De Couto says that the emergency public health service at Rio de Janeiro has a record of 567 food poisoning cases in 1922 and of 764 in 1923. During the hot weather there were 131, 64, 60 or 133 cases a month. The symptoms are those of gastro-enteritis, and in 80 per cent. the Gaertner or Aertrycke bacillus was responsible. One night recently 43 persons were tended and 5 the next day, this epidemic coinciding with a prevailing epidemic of paratyphoid fever.

Leprosy in Para District.—De Souza is now on a trip of inspection of measures for prophylaxis of leprosy in various countries in the Old and New World. The dispensary for examination of and treatment of lepers, opened at Belem in 1921, is due to his initiative. It is an annex of the institute for prophylaxis of venereal diseases. More than 900 lepers have been given treatment with chaulmoogra oil, under which the lesions healed to such an extent that the danger of contagion was reduced to a degree surpassed only by strict isolation. He estimates that there are 3,000 lepers in the state of Para and 75 per cent. of the cases are registered. With a population of 120,000, Belem now has 1,700 lepers; 500 others have been placed in the newly founded Lazaropolis do Prata, the leprosy colony. He regards Belem as the largest focus of leprosy in South America.

Repertorio de Medicina y Cirugía, Bogota

15: 441-488, 1924

Factitious Lesions in Legal Medicine. G. Uribe Cualla.—p. 444.
*Relapsing Fever and Malaria. C. A. Amaya.—p. 449.
Present Conceptions of Pernicious Anemia. C. Andre.—p. 459.

Necessity for Differentiating Relapsing Fever and Malaria.—Amaya has been practicing in a region where malaria is endemic, and the population resort at once to quinin treatment whenever fever develops. His examination of the blood of his patients showed, however, that the spirochetes of relapsing fever were responsible for the fever, and not malarial plasmodia, in about half the cases of fever. Young infants pay a heavy tribute to relapsing fever as the disease is unrecognized, and the quinin given for the supposed malaria is not only futile but directly injurious. The spirochetes were rarely found in adult natives but almost constantly when fever developed in recent arrivals. In children, relapsing fever generally begins with convulsions, and in some of the cases reported, the family gave quinin surrepti-

tiously. In adults the clinical picture resembles that of malaria. Only examination of the blood is conclusive. In some cases helminthiasis misled the diagnosis. Relapsing fever yields promptly to neo-arsphenamin, but he knows of a number of instances in which vermifuges, quinin and decoctions were given, with fatal outcome.

Semana Médica, Buenos Aires

2: 173-224 (July 24) 1924

*Cephalic Tetanus. R. F. Vaccarezza.—p. 173.
The Hypertension of Aortic Insufficiency. J. R. Goyena.—p. 210.
*Neo-Arsphenamin by Way of the Nose. R. Podestá.—p. 212.
Dystocia from Anteversion and Sack-Like Dilatation of Lower Segment of Uterus. D. Iraeta and R. Bustos Morón.—p. 213.
The Midwife in the Fight Against Cancer. J. A. Gabastou.—p. 215.
Radiotherapy for Hydatid Cysts. C. Heuser.—p. 217.

Cephalic Tetanus.—Vaccarezza's monograph is based on four cases, described in detail with illustrations and nearly three pages of bibliography. Treatment has to be threefold, local, to ward off infection, general, with the antiserum, and sedative. The earlier the antiserum is given the better the results, and he warns that the possibility of Rose's cephalic tetanus should be considered in every case of facial paralysis with a history of trauma of the head; even in doubtful cases. Trauma of the eye region is particularly likely to entail cephalic tetanus; every penetrating injury of the eye calls for preventive injection of the antiserum and, if panophthalmia develops, the eye should be enucleated without delay. Some prefer exenteration.

Neo-Arsphenamin Treatment by Way of the Nose.—Podestá recalls that the inferior turbinates enlarge and shrink, like a corpus cavernosum, so that they can serve for absorption of a drug when the intravenous route is not practicable. In several cases he has injected neo-arsphenamin in this way, introducing the needle into the spongiosa of the turbinate. After the solution has been slowly injected, he waits a few seconds before withdrawing the needle, and then applies a very small tampon of iodoform gauze, with petrolatum, to the spot to arrest the hemorrhage, which is otherwise profuse. The patient can remove the tampon next day.

Deutsche medizinische Wochenschrift, Berlin

50: 1105-1136 (Aug. 15) 1924

*Dysentery Antiserum. W. Kolle et al.—p. 1105.
Cells and Body Fluids. Rhoda Erdmann.—p. 1108.
The Rickets Question. R. Hamburger.—p. 1110.
*Injury of Child by Anesthesia in Labor. H. Küstner.—p. 1112.
Colitis with Ulcer Symptoms. L. v. Friedrich.—p. 1113.
*Digestion and Resistance of Erythrocytes. Acél and Spitzer.—p. 1115.
Dangers in Treatment of Psychoneuroses. C. Römer.—p. 1117.
*Palpation of Kidneys. E. Pfister.—p. 1119.
Etiology of Loose Bodies in Joints. H. Nölle.—p. 1120.
Ambulatory Steinach Operation. Levy-Lenz.—p. 1121.
Purulent Parotitis in Infant. W. Brandt.—p. 1121.
Progress in Physical Diagnosis. H. Rautmann.—p. 1121. Cont'n.
Public Hygiene in Berlin. Rabnow.—p. 1122.
Professional Rules. S. Alexander.—p. 1124.
Heredity in Dramatic Art. F. Köhler.—p. 1125.

Dysentery Antiserum.—Kolle, Schlossberger and Prigge find the mouse a very suitable subject for determination of the titer of antidysentery serums. They believe that the toxin of Shiga-Kruse bacilli is uniform. The titer of the antitoxic serums has to be increased if they are to be of value in treatment of dysentery.

Injury of Child by Anesthesia in Labor.—Küstner saw normal breathing in the new-born delivered by cesarean section in intraspinal anesthesia of the mother. General anesthesia of the mother may cause asphyxia in the child by paralyzing the respiratory center.

Digestion and Resistance of Erythrocytes.—Acél and Spitzer found in healthy and hyperacid subjects an increased osmotic resistance of the erythrocytes about thirty-five minutes after a test meal. This is coincident with the time when an increased carbon dioxid tension of the alveolar air occurs. Small amounts of a solution of sodium bicarbonate added to the blood in vitro also increased the resistance of the red blood corpuscles.

Palpation of Kidneys.—In Pfister's method the patient stands bent forward as far as possible and supports himself with the hands on the edge of the bed. The physician, standing behind him, palpates the kidneys up under the edge of the ribs. The spleen, liver and gallbladder can also be palpated in this position.

50: 1137-1168 (Aug. 22) 1924

*Danger of Diagnostic Excision of Cancer. T. Heynemann.—p. 1137.
Technic of Sedimentation Test. M. Henkel.—p. 1138.
Roentgen Treatment in Internal Medicine. Halberstaedter.—p. 1138.
*Roentgen Rays and Vegetative System. J. Rother.—p. 1141.
Leukopenia After Intracutaneous Injection. H. Hahn.—p. 1143.
Poisoning with Chenopodium Oil. N. Niemeyer.—p. 1145.
*Syphilitic Stigmas. N. Hensen.—p. 1147.
Treatment of Pernicious Anemia. I. Zadek.—p. 1148.
Meinicke's Turbidity Reaction. W. zur Linden.—p. 1149.
*Histology and Treatment of Dementia Praecox. H. Josephy.—p. 1151.
Staining of Spirochetes. F. W. Oelze.—p. 1151.
Treatment of Ulcer of Stomach. A. Zahn.—p. 1152.
*Treatment of Tetanus. S. Löber.—p. 1152.
Surgical Use of Epinephrin. M. Rapp.—p. 1153.
*Rapid Growth After Typhus. G. Wethanopulos.—p. 1153.
Progress in Physical Diagnosis. Rautmann.—p. 1154. Conc'n.
Typhoid Control in Germany. Hage.—p. 1155.
*Tuberculosis Infection Rate of Girls. H. Pach.—p. 1157.
Graphology. G. Schneidemühl.—p. 1157. Cont'd.
"Treatment of Encephalitis." Buss.—p. 1160.

Danger from Diagnostic Excision in Cancer.—Heynemann considers an incorrect negative diagnosis as the greatest danger from a diagnostic excision. It is not enough to scrape the mucosa of the cervix. A regular piece in the border between the healthy and suspicious tissue should be excised. Infection is frequent. Therefore, radical operation should immediately follow the examination of a frozen section.

Roentgen Rays and Vegetative System.—Rother found with Strauss a more pronounced lowering of the blood pressure when irradiating the abdominal skin of rabbits than after irradiation of muscles. Skin doses produced in man a transitory lowering of the blood sugar followed by an increase on the next day. Animals reacted always with a hyperglycemia which could be prevented by extirpation of the suprarenals.

Syphilitic Stigmas.—Hensen points out that the crescent defect is not characteristic of Hutchinson's teeth: The edge of the upper middle incisors (sometimes of all the incisors) is narrower than the base, or the teeth are barrel-shaped. Chorioretinitis is another frequent stigma.

Histology and Treatment of Dementia Praecox.—Josephy believes that dementia praecox is regularly associated with changes in the cortex of the brain. He found a destruction of the third and fifth layer of cells in patients with catatonic symptoms. He believes that intramuscular injections of the own blood have a beneficial effect in acute stages.

Treatment of Tetanus.—Löber reports the excellent result of an epidural injection of 50 c.c. of a 1 per cent. procain solution in a case of tetanus.

Rapid Growth After Typhus.—Wethanopulos' patient began growing rapidly during an attack of typhus fever which he contracted when 14 years old. His height was 6 feet 2½ inches at the age of 19, when he had a sore throat. He gained 3 cm. more in height after that. The sex organs were normal.

Tuberculosis Infection Rate of Girls and Boys.—Pach's statistics show that tuberculosis infection in Budapest is much more frequent in girls than in boys.

Klinische Wochenschrift, Berlin

3: 1521-1560 (Aug. 19) 1924

*Arteriosclerosis. J. G. Mönckeberg.—p. 1521. Conc'n.
*Lipases of Organs. J. Broekmeyer.—p. 1526.
*Etiology of Lipoid Arc of Cornea. Versé and Rohrschneider.—p. 1528.
*Hibernation. B. Zondek.—p. 1529.
*Blood and Weight After Cholesterol. Dörle and Sperling.—p. 1530.
*Testing Preparations for Hair Growth. Loewe and Faure.—p. 1532.
Water Metabolism After Tuberculin Treatment. W. Pockels.—p. 1533.
Demonstration of Spirochaeta Pallida in Frozen Sections. G. Armuzzi and R. Strempel.—p. 1534.
*Pyramid Shape of Thorax. J. T. Peters.—p. 1535.
"Spontaneous Hemostasis." H. Stegemann.—p. 1538.
Arthrodesis of Knee and Ankle. E. Schepelmann.—p. 1538.
*Injection of Sugar with Insulin. Koref and Rigler.—p. 1538.
Pathogenesis of Urticaria. L. Török and E. Rajka.—p. 1539.
Negative Wassermann in Secondary Syphilis. Ruge.—p. 1540.
Bismuth Treatment of Syphilis. E. Hoffmann.—p. 1541.
Goiter Prevention in Schools. K. Lang.—p. 1546.
Spirsil Stain for Spirochetes. W. Krantz.—p. 1559.
*Affection of the Nose in Pernicious Anemia. Schwenkenbecher.—p. 1559.

Arteriosclerosis.—Mönckeberg concludes his report presented at the congress of South German pathologists. Arteriosclerosis is a complex process consisting of two phenomena: degenerative deposits of lipoids and regenerative proliferation. Each of these two components may occur alone, but their combination is almost the rule. One predisposes to the other. The degenerative phase is due to a disturbance of the metabolism of cholesterol, which does not necessarily cause an increase in the concentration of the substance in the blood. Functional factors (hypertension) may contribute even to this degenerative part of the arteriosclerosis.

Lipases of Organs.—The lipolytic ferment of the kidneys is resistant to cocain and strychnin, according to Broekmeyer, just as is the lipase of the liver and the erythrocytes. Pancreas lipase is resistant to cocain, but is influenced by greater concentrations of strychnin. Human serum inhibits the action of the pancreas lipase.

Etiology of Lipoid Arc of Cornea.—Versé and Rohrschneider produced in rabbits overfed with cholesterol a lipoid infiltration of the edge of the cornea. Local injuries enhanced the deposits which resembled the human arcus senilis of the cornea. The condition occurs in comparatively young diabetics with hypercholesterolemia.

Hibernation.—Zondek found that the commercial extracts of endocrine glands do not contain any specific substances, with the exception of the preparations of the posterior lobe of the pituitary. As Adler claimed that he interrupted the winter sleep of hedgehogs by injections of thyroid extracts, with apparently convincing controls, Zondek repeated the experiments. At last he found that the action is due to the temperature of the fluid injected. If it is more than 8 degrees (C.) higher than the rectal temperature of the sleeping animal, the hedgehog wakes up. His temperature center reacts more to the injection than to an increased temperature of the air.

Blood and Weight After Cholesterol.—Dörle and Sperling observed an increase in the number of erythrocytes and in the hemoglobin within a few hours after ingestion of cholesterol. The resistance of the erythrocytes increased both in animals and in patients. They had fair results when giving 0.08 gm. in milk three times daily for two weeks, especially in the anemia of tuberculous patients.

Testing Preparations for Hair Growth.—Loewe and Faure show the fallacy of comparing the hair growth on pigmented and unpigmented parts of the skin of rabbits. The growth is much more rapid on pigmented areas. They tested a proprietary preparation for its alleged beneficial action on hair growth. It seemed to be at first an excellent means to prevent it. Only after selecting exactly similar regions of skin they found that it has no action whatever.

Pyramidal Shape of Thorax.—Peters observed six instances of deformity of the thorax in the shape of a pyramid, with the apex on the lower portion of the sternum. He attributes its formation to difficulties in respiration such as occur especially in bronchial asthma and to a less extent with adenoids. A possible mechanism of the development of the deformity is discussed.

Injection of Sugar with Insulin.—Koref and Rigler found in rabbits a greater depression of the blood sugar when injecting insulin with a glucose solution than after injections of insulin alone.

Affection of the Nose in Pernicious Anemia.—Schwenkenbecher observed vesiculation and pains in the nose in pernicious anemia patients. The affection paralleled the glossitis.

Medizinische Klinik, Berlin

20: 1129-1162 (Aug. 17) 1924

Indications for and Technic of Forceps Delivery. M. Henkel.—p. 1129.
Practitioners and the Bacteriologic Laboratory. P. Kuhn and W. Loele. —p. 1131.
*Tissue Changes After Bismuth. R. Jaffé.—p. 1135.
*Syphilitic Mesaortitis. G. Spengler.—p. 1137.
Sinusoidal Current in Treatment. K. Schmid.—p. 1141.
Septic Pyelitis in Infants. J. Duzár.—p. 1143.
Aseptic Portable Syringe. Rattner.—p. 1145.
Chemistry of Bismuth Compounds. H. Bauer.—p. 1146.
Obstetric Breviary. F. Eberhart.—p. 1148. Cont'n.
Survey on Ophthalmology. Adam.—p. 1150.
Training of Teachers in Hygiene. Uhlenhuth and Seiffert.—p. 1159.

Tissue Changes After Bismuth.—Jaffé reports research on the local changes after injections of preparations of bismuth. Some of them caused a large sterile abscess and necrosis of muscles with calcification. Other preparations of bismuth induced a more marked formation of granulation tissue.

Syphilitic Mesaortitis. — Spengler treated eighty-four patients with syphilitic affections of the aorta and its valves. An improvement from specific treatment was frequent, but a cure was never obtained. The arsphenamin injections were given only after several injections of mercurial drugs. He also reports instances of failure of the treatment and exacerbation of the condition after treatment.

20: 1163-1196 (Aug. 24) 1924

*Recurrences After Operations for Cholelithiasis. Dreesmann.—p. 1163.
*Pernicious Anemia and Pregnancy. R. Benda.—p. 1163.
*Vaccination and Encephalitis. F. Lucksch.—p. 1170.
Resistant Syphilis. E. Langer.—p. 1171.
Pseudochylous Ascites or Lipoidemia in Nephrosis. R. Stoffel.—p. 1174.
Treatment of Chronic Enteritis. Siebelt.—p. 1176.
Torsion of Ovarian Cyst in Child. O. Wallerstein.—p. 1177.
Treatment of Rhinitis Sicca. E. Friedländer.—p. 1178.
"Intrathoracal Auscultation." H. Gerhartz.—p. 1178.
Meinicke's Turbidity Reaction. G. Bruns.—p. 1178.
Quick Microscopic Diagnosis. B. T. Terry.—p. 1179.
Survey on Pneumococci. S. Lichtenstein.—p. 1182.
Dispensary for Diabetics. E. Lyon.—p. 1195.

Recurrences After Operations for Cholelithiasis.—Dreesmann had 3.9 per cent. of recurrences after operations for gallstones. An overlooked stone in the common bile duct is the most frequent cause. Relaparotomy is indicated.

Pregnancy Pernicious Anemia.—See abstract of similar article below.

Vaccination and Encephalitis.—Lucksch found no differences between the keratitis produced in rabbits by cowpox lymph or by the contents of herpes vesicles. The degeneration of cells in herpes resembled perfectly Guarnieri's bodies.

Münchener medizinische Wochenschrift, Munich

71: 1119-1154 (Aug. 15) 1924

*Treatment of Gynecologic Bleeding. J. Borak.—p. 1119.
*Wassermann's Tuberculosis Reaction. H. Friedrich.—p. 1121.
*Dosage of Old Tuberculin. Mayer and W. Böhme.—p. 1123.
*Uterine Cancer and Alimentary Leukopenia. W. Simon.—p. 1124.
Periarteritis Nodosa. A. Brasser.—p. 1126.
*Gold Reaction in Dementia Praecox. Golant-Ratner.—p. 1128.
Cancer Poison. V. E. Mertens.—p. 1128.
*Blood Groups. P. Mino.—p. 1129.
Civilization Constipation. R. Schindler.—p. 1130.
Gastro-Enteritis in Infants. E. Enderlein.—p. 1131.
Wandering Shell-Splinter. R. Steidle.—p. 1133.
Simplified Venepuncture. G. Elkeles.—p. 1133.
Heredity of Cancer. O. Schneider.—p. 1134.
Diagnosis of Meningitis. K. Waltner.—p. 1134.
Congenital Myotonia and Pseudoparalytic Myasthenia. H. Curschmann. —p. 1135.
Artificial Abortion. Schüle.—p. 1136.
Medical Expert Testimony. K. Grassmann.—p. 1137.
Russian Medical Journals. S. Weissenberg.—p. 1139.

Treatment of Gynecologic Bleeding.—Borak irradiates the spleen or the liver in women with uterine hemorrhages or menorrhagia. He never had to resort to irradiation of the ovaries in young patients. He adds this only in the menopause.

Wassermann's Tuberculosis Reaction.—Clinical findings and three necropsies have convinced Friedrich that Wassermann's tuberculosis reaction is not a proof of an active process.

Dosage of Old Tuberculin.—Mayer and Böhme point out that old tuberculin is a colloidal mixture of unknown elements. Exact dosage is impossible.

Uterine Cancer and Alimentary Leukopenia.—Simon found alimentary leukopenia in twenty-nine out of thirty-two women with cancer of the sex organs. The reaction became negative in sixteen out of seventeen clinically cured cases.

Colloidal Gold Reaction in Dementia Praecox.—Golant-Ratner observed a moderately strong colloidal gold reaction in twelve patients with dementia praecox. The maximum was between 80 and 160.

Blood Grouping.—Mino believes that the alleged existence of more than four blood groups is due simply to the dilution

of the serum used by different workers. Certain corpuscles are agglutinated only by stronger concentrations of the serum.

71: 1155-1188 (Aug. 22) 1924

*Changes of Personality. A. Bostroem.—p. 1155.
*Healing of Fractures. R. Eden.—p. 1160.
*Contraction of Striated Muscles. G. Pusch.—p. 1164.
Treatment of Tuberculosis in Children. H. Karfunkel.—p. 1166.
*Chlorids of the Serum. Foutsin Di.—p. 1167.
*Charcoal and Metal Salts. Rakusin and Nesmejanow.—p. 1168.
Simplification of Metabolism Test. H. W. Knipping.—p. 1168.
Treatment of Spondylitis. A. Henle.—p. 1169.
"Social Insurance and Obstetrics." Zangemeister.—p. 1170.
Diseases of Metabolism: Diabetes. F. Umber.—p. 1171.
Teaching of Hygiene by Radio. Fischer-Defoy.—p. 1172.
Expert Testimony in Accident Cases. Ledderhose.—p. 1172. Cont'd.

Changes of Personality.—Bostroem believes that pathologic changes of personality occur only with organic changes in the brain. Exogenous poisons (alcohol, morphin) may be a cause if taken chronically. Changes of personality differentiate schizophrenia from paraphrenia, in which they are absent.

Healing of Fractures.—Eden found in young callus a ratio of calcium to phosphate of 1 to 0.2 or 0.4 as compared with 1 to 0.6 in the normal bone. The first phase of ossification is the adsorption of calcium ions, the second a deposit of phosphoric acid and carbon dioxid, and the third a partial cleavage of the protein compounds of these ions and deposits of the resulting inorganic compound. He injected locally a solution of sodium-glycocoll-phosphate in delayed ossification of fractures, and reports good results.

Contraction of Striated Muscles.—Pusch describes a model of the contraction of muscles. He based it on the galvanic element.

Chlorids of the Serum.—Di found a good conformity between the erythrocytes and chlorids of the venous and capillary blood even after ingestion of sodium chlorid. It is, however, necessary to keep the finger in warm water and rub it before drawing the blood.

Activated Charcoal and Solutions of Metal Salts.—Rakusin and Nesmejanow's experiments demonstrate the marked absorption of dissolved salts of mercury and silver and, to a less extent, of lead by vegetable charcoal. This proves again that the use of this charcoal in poisoning is rational.

Wiener klinische Wochenschrift, Vienna

37: 817-840 (Aug. 21) 1924

*Postoperative Adhesions. L. Schönbauer.—p. 817.
*Idiosyncrasy and Anaphylaxis. B. Busson and N. Ogata.—p. 820.
Pains in Cirrhosis and Atrophy of the Liver Simulating Gallstones. F. E. Löwy.—p. 823. Cont'd.
*Staphylococcus Opsonins in Itching Dermatoses. Löwenfeld.—p. 826.
*Duodenal Pylorus Reflex. T. Bársony and B. Hortobágyi.—p. 828.
Examination of Tubular Organs. H. Hamperl.—p. 830.
Recurrence of Influenza. B. Joachimovitz.—p. 831.
Body Proteins in Diseases. W. Berger.—p. 831. Conc'n.
Surgery in the United States. H. Finsterer.—p. 833. Conc'n.
Ileus. L. Schönbauer. Supplement, pp. 1-10.

Postoperative Adhesions.—Schönbauer believes that adhesions are due to some action of ferments. Dogs immunized with trypsin survived after experimental ileus lasting twenty-four hours and followed by resection. Their blood had also a protective action. The controls died. No adhesions were observed in trypsin resistant animals after various intraperitoneal manipulations.

Idiosyncrasy and Anaphylaxis.—Busson and Ogata injected guinea-pigs with extracts from horse scales. Inhalation of the powder produced grave anaphylactic symptoms—even death. Inhalation of a sprayed solution resulted also in sensitization. The shock produced by inhalation did not desensitize the animals.

Staphylococcus Opsonins in Itching Dermatoses.—Löwenfeld determined the opsonic index for staphylococci in various itching affections of the skin (hives, chronic eczema, pruritus). No constant relations were seen between the height of the index and the absence of secondary suppuration.

Duodenal Pylorus Reflex.—Bársony and Hortobágyi conclude from their experiments that the theory of reflex contraction of the pylorus following stimuli acting in the duodenum is untenable.

Zentralblatt für Chirurgie, Leipzig

51: 1671-1718 (Aug. 2) 1924

Phenolated Camphor (Chlumsky Solution). V. Chlumsky.—p. 1672.
Perforation of the Small Intestine by an Ascarid After Incarcerated Femoral Hernia. H. Degenhardt.—p. 1675.
Varieties of Femoral Hernia. H. J. Willerding.—p. 1677.
Case of Ventral Hernia (Spigelii). M. Apfelthaller.—p. 1681.
Case of Gastric Lipoma. H. Nahmmacher.—p. 1683.
*Dangers from Periarterial Sympathectomy. W. Rieder.—p. 1685.
Combination Sound and Shears. E. König.—p. 1687.

The Dangers from Periarterial Sympathectomy.—Rieder reports three cases to show that periarterial sympathectomy may be attended by grave consequences. Necropsy in one case revealed thrombosis throughout the whole extent of the femoral artery from which the periarterial tissue had been removed a few days before in treatment of arteriosclerotic gangrene of the great toe. In a second case, an old fracture of the leg that refused to consolidate, the periarterial sympathectomy had no effect on the healing, and six weeks later, the leg had to be amputated. In the third case, ulcus cruris, edema followed, but after several weeks the patient recovered.

Zentralblatt für Gynäkologie, Leipzig

48: 1793-1832 (Aug. 16) 1924

The Kielland Forceps. H. Peters.—p. 1793.
The Kielland Forceps. H. Heidler.—p. 1797.
Lüttge's Serologic Sex Determination. L. Deak.—p. 1805.
*Uterine Cancer with Ectopic Pregnancy. H. Hirschberg.—p. 1808.
*Action of Roentgen Rays on Pressure. C. Schroeder.—p. 1809.
Cicatricial Closure of External Os. Gutzeit.—p. 1812.
Focal Reaction in Mud-Bath Treatment. Stephanowitsch.—p. 1813.
Clinical Phenomena in Induced Abortion. S. Weissenberg.—p. 1817.

Association of Ectopic Gestation with Cancer.—Hirschberg reports a case of tubal pregnancy coinciding with carcinoma of the uterine cervix. The microscopic findings showed that the cancer had preceded the gestation.

Action of Roentgen Rays on Blood Pressure.—Schroeder's 400 examinations in eighty patients proved that the roentgen rays decrease the pressure. The effect was chiefly pronounced in hypertension, but was always marked in normal subjects, and seemed to be proportional to the dose. The decrease was practically constant immediately after the exposure, and persisted during many days, sometimes even weeks. In a case with hypertension the decrease of 30 mm. of mercury was manifest after eight weeks. He accepts the view that the action may be due to stimulation of the vagus.

48: 1833-1880 (Aug. 23) 1924

Four Ovarian Dermoid Cysts Including Extremities. R. Meyer.—p. 1834.
Sampson's Theory of Endometrial Implants. E. Vogt.—p. 1837.
*Etiology of Adenomyomas. H. Linden.—p. 1848.
Decidual Tissue in Vagina. K. Ulesco-Stroganowa.—p. 1855.
*Cholesterol and Pregnancy Pernicious Anemia. Benda.—p. 1857.
Meninges Phenomena After Lumbar Puncture. E. Bamberger.—p. 1861.
Obstetric Roentgen-Stereometry. B. Archangelsky.—p. 1866.

Genesis of Adenomyoma.—Linden's study during eight and a half years has demonstrated that the difference in the clinical, as well as in anatomic features in adenomyomas is explained by a different genesis. Some are the result of penetration of the uterine mucosa into a less resistant musculature, and some of a secondary implantation of ruptured tarry ovarian cysts. The menstrual blood, and the content of the cysts are considered as factors of irritation.

The Pathogenesis of Anemia in Pregnancy.—Benda found a decrease in cholesterol in the blood (in contrast to the usual cholesterolemia in pregnancy) in two cases associated with pernicious anemia. The necropsy showed atrophy of the suprarenals, contrary to the hypertrophy in normal gestation. It may be assumed that a defect of the suprarenals causes the decrease in cholesterol, and its amount then is no longer adequate to resist the hematolytic action of the toxins in pregnancy.

Zentralblatt für innere Medizin, Leipzig

45: 665-680 (Aug. 16) 1924

*Trigeminal Neuralgia. D. Kulenkampff.—p. 665.

Trifacial Neuralgia.—Kulenkampff believes that trifacial neuralgia is a nosologic entity completely different from any other neuralgia. Vasomotor and secretory disturbances are common. Spasms of the blood vessels of the gasserian ganglion may be the cause.

Casopis lekaruv ceskych, Prague

83: 1153-1280 (Aug. 23) 1924

*Carpometacarpal Arthropathy of Forefinger. A. Sigmund.—p. 1253.
*Ganser's Symptom in General Paralysis. V. Vondrácek.—p. 1255.
Flocculation Reactions in Syphilis. J. Hachla.—p. 1261. Cont'n.
Surgery of Perforated Gastric Ulcer. L. Petrlák.—p. 1266.
*Surgery of Pulmonary Tuberculosis. J. Divis.—p. 1268.

Carpometacarpal Arthropathy of Forefinger.—Sigmund observed three cases of a chronic affection of the carpometacarpal joint of the index finger. Injury and strain seem to play an important rôle in the origin or at least in the aggravation of the condition.

Ganser's Symptom in General Paralysis.—Vondrácek reports a case of general paralysis with Ganser's symptom (vorbeireden). There was practically no difference between the symptom in this case and in the conditions in which it occurrs typically (hysteria, criminals).

Surgery of Pulmonary Tuberculosis.—Divis considers paravertebral thoracoplasty a valuable last resort, especially in unilateral pulmonary tuberculosis of cirrhotic type.

Acta Chirurgica Scandinavica, Stockholm

57: 193-385 (Aug. 13) 1924

*Tuberculous Spondylitis. S. Leskinen.—p. 193.
*Thyroid Disease. B. Breitner.—p. 207.
*Cancer of the Colon. E. Landelius.—p. 249.
*Adhesive Pericarditis. Schmieden.—p. 268.
*Epiploitis and Torsion of Omentum. S. Hansen.—p. 284.
Diagnosis of Gallstone Ileus. E. Tengwall.—p. 299.
Arthrodesis of Shoulder for Deltoid Paralysis. G. Asplund.—p. 310.
Arthroplasty; Seven Cases. A. Odelberg.—p. 331.
*Fracture of the Spine. A. Thorndike, Jr.—p. 339.
Spontaneous Hernial Rupture. H. Rudberg.—p. 367.
*Embolectomy. O. Lundblad.—p. 375.

Conservative Treatment of Tuberculous Spondylitis.—Leskinen reports complete recovery in 30.4 per cent. of 137 conservatively treated cases of tuberculous spondylitis traced to date (Finland) out of a total of 220 cases, 1895-1920. The proportion cured was 68.5 per cent. of the processes in the cervical spine; 21.1 per cent. in the thoracic vertebrae, and 34.1 per cent. in the lumbar spine. The longer the stay in the institution, the larger the percentage of cures.

Treatment of Goiter.—Breitner's extensive clinical research has demonstrated that the clinical aspect, the microscopic findings and the colloid content of the thyroid must be considered together in guiding treatment. Each form of this triad is characteristic, as he explains in detail, his clinical, necropsy and operative findings confirmed by experimental research. Mechanical impeding of normal evacuation of the gland must be corrected as the first step; iodin treatment must follow resection when thyroid secretion is deficient. With hypertrophy and excessive secretion, ligation of arteries with more or less resection is indicated, and supplementary organotherapy. The thyroid and the parathyroids are antagonists. In tetany and Parkinson's disease, parathyroid insufficiency predominates. With parathyroid deficiency, combined organotherapy is required, as also in purely functional thyroid disturbances. This opens a wide field for the therapy of the future; it calls for research on the chemical structure of the interfollicular and intracellular colloids, study of retroresorption, uniform estimation of iodin content, and interpretation of staining properties, etc. The main thing is to bear in mind that a thyroid affection represents the interplay of the whole organism; it is not a mere local derangement.

Resection of Cancerous Colon.—Landelius urges the importance of keeping the feces thin in the large intestine during healing after resection, to avoid the strain on the suture from formed masses. He has found a tablespoonful of castor oil every day excellent for this purpose. His mortality in the sixteen cases described was 12.5 per cent.

Adhesion of Pericardium.—Schmieden concludes his profusely illustrated plea for relief of the heart by removal of the shriveling and thickened area of the pericardium, with the statement that it is a very promising field for surgical intervention. The main thing is not to delay until the heart muscle has become too damaged to recuperate. The adhesive pericarditis may not cause any symptoms as long as the adhesions are soft.

Torsion of the Omentum.—Hansen's two cases of epiploitis and torsion of the omentum teach the necessity for resecting the omentum well into sound tissue to avoid thrombosis.

Fractures of the Spine.—Thorndike states that all of the forty-seven cases of fracture of the spine described healed with full-time earning capacity except those in which the spinal cord was permanently injured. In six cases there was slight curvature or protuberance, and five of these had pain in bending the spine.

Embolectomy.—Lundblad adds three more cases to the few on record of removal of an embolus. In two of the cases the embolus was at the bifurcation of the aorta. All of the patients had heart disease, and two had pneumonia, and these died a few hours after the embolus had been removed. The third patient recovered after removal of the embolus from the iliac artery, two days after spontaneous delivery. The embolus forked; one leg was 2.5 cm. and the other 6 cm. long, the body, 3 cm. It was reached through an abdominal incision as a retroperitoneal incision did not give sufficient access owing to the large size of the uterus.

Ugeskrift for Læger, Copenhagen

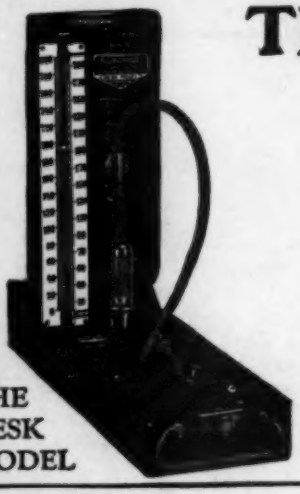
86: 543-560 (July 17) 1924

*Pigmentation Under Phototherapy. Sophus Bang.—p. 543.
*Snapping Finger in Polyarthritis. J. Helweg.—p. 546.
*Differential Symptom of Senile Hip Disease. H. Jansen.—p. 547.
Present Status of Chordotomy. K. H. Krabbe.—p. 549.
Ward for Neurosurgery. K. H. Krabbe.—p. 550.
Péan's Pioneer Work in Abdominal Surgery. Brochin.—p. 552.

Importance of Pigment Production in Phototherapy.—Bang expatiates on recent research which has shown the almost perfect coincidence between the curve representing the bactericidal and hemoglobin-destroying light rays and the curve representing the light rays which induce pigmentation and sunburn in the skin. From entirely different standpoints it has thus been established that the potent segment of the spectrum for all these vital processes lies between the lines 302 and 289, with the maximum at line 297. It has also been established that the precursor of the melanin is dioxyphenylalanin, or dopa as it is called for short. An oxidizing ferment transforms the dopa into melanin. The resulting pigmentation occurs in the same cells in the epithelium in which the light rays induce pigmentation, and the pigmentation does not occur in regions free from dopa, as in vitiligo patches. This dopa is closely allied to epinephrin, and defective functioning of the epinephrin-producing organ, the suprarenals, entails excessive pigmentation. Scraps of skin kept in alcohol grow darker, unless treated with formaldehyd, etc. Scraps of skin from Addison's disease grow almost black. This vital process of pigmentation under the influence of light and of the oxidizing ferment's action suggests the possibility that the dopa is precipitated to render it harmless. This assumption is sustained by Brahn and Schmidtmann's discovery that the melanin from melanotic tumors induces vasoconstriction in animals, but no hyperglycemia, and, after a brief rise, depresses the blood pressure and entails extreme arrhythmia. Bang presents these and other data to sustain the view that the benefit from tanning in phototherapy may be due to the fact that it eliminates some harmful substance. Certain individuals never tan, especially certain tuberculous subjects, and these seem absolutely refractory to phototherapy in any form.

Snapping Finger.—Helweg has been successful in curing this anomaly with massage, even in inveterate cases. He has found records of snapping finger in twenty-one of 413 cases of polyarthritis, and he noted it in eleven of his twenty-three polyarthritis patients in the last five months.

Diagnosis of Arthritis Deformans of the Hip Joint.—Jansen refers to the cases in which the pain is felt most severe or exclusively in the knee or in the sciatic nerve domain, the true cause, the senile hip joint disease, escaping detection. When a patient complains of pain in the leg, Jansen tests him with the position assumed for putting on a stocking, that is, crossing the leg over the opposite thigh. This reveals at once that the hip joint is the main element. The younger the subject, the greater the likelihood of finding some traumatic or exposure factor; after 40 this is less common, the age alone explaining the disturbances.



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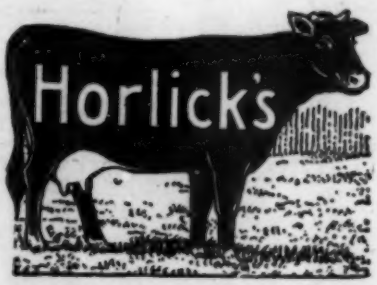

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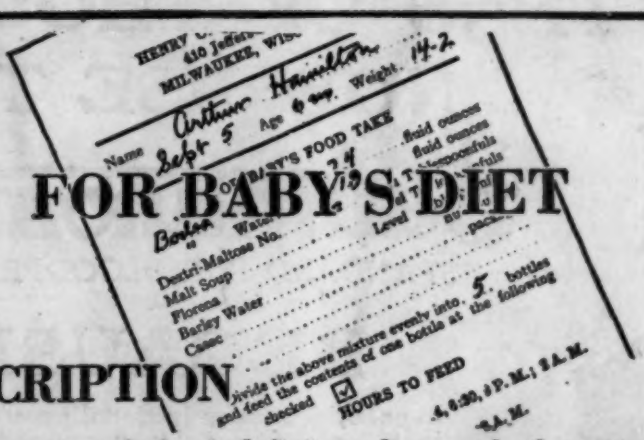

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